

SEQUENCE LISTING

<110> JOHNSTON, STEPHEN A.
STEMKE-HALE, KATHERINE
SYKES, KATHRYN F.
KALTENBOECK, BERNHARD

<120> METHODS AND compositions for Vaccination COMPRISING NUCLEIC ACID
AND/OR POLYPEPTIDE SEQUENCES OF *CHLAMYDIA*

<130> UTSD:736US

<140> UNKNOWN

<141> 2001-12-17

<150> 60/225,839

<151> 2000-12-15

<160> 69

<170> PatentIn Ver. 2.1

<210> 1

<211> 127

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 1

ctgcacctgg tccttcgcct gagaggtgca gatcttggat cctaagtaag taagcttgca 60
tgcctgcagg tcgactctag gtgactaata tctagaggat cgatcccggt tggcatccct 120
gtgaccc 127

<210> 2

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 2

gatctggatc ccgat 15

<210> 3

<211> 11

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer
<400> 3
atcgggctcc a 11

<210> 4
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer
<400> 4
ccgcaccctc tctgattac 19

<210> 5
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer
<400> 5
ctggagtggc aacttcc 17

<210> 6
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer
<400> 6
gaatgtattc gcacgcaaaa atacgctgaa gctttgcttc ctgtcacgac agcgatcaat 60
tctggagtgc cgcctatcac ctctctccat gacctcactg ttttttatcg cgatgtactg 120
ctaaacaaaag atcagggaaa ttctctctta tcggccatcg ccatgcacta ttccagtga 180
tgtttattag aaatcattga ttctcttggt gaagcggcca aacatctaca aaaaactatt 240
tttgaaaaaa cattttttaga aacagtcata atccatctta ttcgatatg ccaacgtccc 300
tcttttagaaa ctctgttttc tcaactgaaa acatccacgt ttgatacagt gagaaacgta 360
ccccagcagc aagaaccctc gaaaccgagt atacaacctg aaaaacacta tcaagatcag 420
agttttcttaa cttcaccttc tcccacgcc 449

<210> 7
<211> 149

<212> PRT

<213> Chlamydia psittaci

<400> 7

Glu Cys Ile Arg Thr Gln Lys Tyr Ala Glu Ala Leu Leu Pro Val Thr
1 5 10 15

Thr Ala Ile Asn Ser Gly Val Ala Pro Ile Thr Phe Leu His Asp Leu
20 25 30

Thr Val Phe Tyr Arg Asp Val Leu Leu Asn Lys Asp Gln Gly Asn Ser
35 40 45

Pro Leu Ser Ala Ile Ala Met His Tyr Ser Ser Glu Cys Leu Leu Glu
50 55 60

Ile Ile Asp Phe Leu Gly Glu Ala Ala Lys His Leu Gln Gln Thr Ile
65 70 75 80

Phe Glu Lys Thr Phe Leu Glu Thr Val Ile Ile His Leu Ile Arg Ile
85 90 95

Cys Gln Arg Pro Ser Leu Glu Thr Leu Phe Ser Gln Leu Lys Thr Ser
100 105 110

Thr Phe Asp Thr Val Arg Asn Val Pro Gln Gln Gln Glu Pro Ser Lys
115 120 125

Pro Ser Ile Gln Pro Glu Lys His Tyr Gln Asp Gln Ser Phe Leu Thr
130 135 140

Ser Pro Ser Pro Thr
145

<210> 8

<211> 1332

<212> DNA

<213> Chlamydia psittaci

<400> 8

atgacatcag caacatacca agtttcttct agaaaatacc gccctcaaac atttgccgaa 60
atgctggggc aagatgccgt ggtcactgtt ttaaaaaatg ctttgcagtt tcaacgtgtc 120
gcgcatgcgt atttattttc agggattcgc ggaacaggaa aaacaacttt agcaagaatc 180
tttgcaaaaag ccttaaaactg taaagagctg actcctgaac atgaaccatg caaccagtgt 240
tgtgtttgta aagaaatctc ttcaggaacc tccttagacg tgatcgaaat cgatgggtgcc 300
tcgcaccgag gtattgaaga tatccgtcaa atcaatgaaa ccgtgctctt tactcctgcc 360
aatcacaaat ataaaatcta tatcatagat gaagtccata tgctgactaa ggaggcgttt 420
aatccttac tcaaaaacttt agaagagcct ccgagccatg taaaattctt cttagcgact 480
acagaaaatt ataaaatacc cagcaccatt ttaagtcgtt gtcaaaaaat gcacctaaag 540
agaattcctg agacaatgat tgtagataag ctacgatcca tatctcaagc aggtgggata 600
gaaacctctc gagaagctct tcttcctatt gctagagcag cacaggggaag cttacgcgat 660
gctgaatctc tttatgatta tgtcataggg ttattccta catctttatc cccagagttg 720
gttgacagac cattagggtt attatctcaa gacaccttag ctacattatc agaattgtatt 780

```

cgcacgcaaa aatacgtga agctttgctt cctgtcacga cagcgatcaa ttctggagtc 840
gcgcctatca ccttcctcca tgacctcact gttttttatc gcgatgtact gctaaacaaa 900
gatcagggaa attctcctct atcggccatc gccatgcact attccagtga atgtttatta 960
gaaatcattg atttccttgg tgaagcggcc aaacatctac aacaaactat ttttgaaaaa 1020
acatttttag aaacagtcac catccatctt attcggatat gccaacgtcc ctcttttagaa 1080
actctgtttt ctcaactgaa aacatccacg tttgatacag tgagaaacgt accccagcag 1140
caagaaccct cgaaaccgag tatacaacct gaaaaaact atcaagatca gagttttctta 1200
acttcacctt ctcccacgcc aaaagttcag catcaaaaag aagcttcccc ttcttttagtg 1260
ggatcagcta ctatagatac gcttttaciaa tttgctgttg ttgagttttc cggaatttta 1320
accaaggagt aa 1332

```

<210> 9

<211> 443

<212> PRT

<213> Chlamydia psittaci

<400> 9

```

Met Thr Ser Ala Thr Tyr Gln Val Ser Ser Arg Lys Tyr Arg Pro Gln
  1              5              10              15

```

```

Thr Phe Ala Glu Met Leu Gly Gln Asp Ala Val Val Thr Val Leu Lys
      20              25              30

```

```

Asn Ala Leu Gln Phe Gln Arg Val Ala His Ala Tyr Leu Phe Ser Gly
      35              40              45

```

```

Ile Arg Gly Thr Gly Lys Thr Thr Leu Ala Arg Ile Phe Ala Lys Ala
      50              55              60

```

```

Leu Asn Cys Lys Glu Leu Thr Pro Glu His Glu Pro Cys Asn Gln Cys
      65              70              75              80

```

```

Cys Val Cys Lys Glu Ile Ser Ser Gly Thr Ser Leu Asp Val Ile Glu
      85              90              95

```

```

Ile Asp Gly Ala Ser His Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn
     100              105              110

```

```

Glu Thr Val Leu Phe Thr Pro Ala Lys Ser Gln Tyr Lys Ile Tyr Ile
     115              120              125

```

```

Ile Asp Glu Val His Met Leu Thr Lys Glu Ala Phe Asn Ser Leu Leu
     130              135              140

```

```

Lys Thr Leu Glu Glu Pro Pro Ser His Val Lys Phe Phe Leu Ala Thr
     145              150              155              160

```

```

Thr Glu Asn Tyr Lys Ile Pro Ser Thr Ile Leu Ser Arg Cys Gln Lys
     165              170              175

```

```

Met His Leu Lys Arg Ile Pro Glu Thr Met Ile Val Asp Lys Leu Ala
     180              185              190

```

Ser Ile Ser Gln Ala Gly Gly Ile Glu Thr Ser Arg Glu Ala Leu Leu
 195 200 205

Pro Ile Ala Arg Ala Ala Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu
 210 215 220

Tyr Asp Tyr Val Ile Gly Leu Phe Pro Thr Ser Leu Ser Pro Glu Leu
 225 230 235 240

Val Ala Asp Ala Leu Gly Leu Leu Ser Gln Asp Thr Leu Ala Thr Leu
 245 250 255

Ser Glu Cys Ile Arg Thr Gln Lys Tyr Ala Glu Ala Leu Leu Pro Val
 260 265 270

Thr Thr Ala Ile Asn Ser Gly Val Ala Pro Ile Thr Phe Leu His Asp
 275 280 285

Leu Thr Val Phe Tyr Arg Asp Val Leu Leu Asn Lys Asp Gln Gly Asn
 290 295 300

Ser Pro Leu Ser Ala Ile Ala Met His Tyr Ser Ser Glu Cys Leu Leu
 305 310 315 320

Glu Ile Ile Asp Phe Leu Gly Glu Ala Ala Lys His Leu Gln Gln Thr
 325 330 335

Ile Phe Glu Lys Thr Phe Leu Glu Thr Val Ile Ile His Leu Ile Arg
 340 345 350

Ile Cys Gln Arg Pro Ser Leu Glu Thr Leu Phe Ser Gln Leu Lys Thr
 355 360 365

Ser Thr Phe Asp Thr Val Arg Asn Val Pro Gln Gln Gln Glu Pro Ser
 370 375 380

Lys Pro Ser Ile Gln Pro Glu Lys His Tyr Gln Asp Gln Ser Phe Leu
 385 390 395 400

Thr Ser Pro Ser Pro Thr Pro Lys Val Gln His Gln Lys Glu Ala Ser
 405 410 415

Pro Ser Leu Val Gly Ser Ala Thr Ile Asp Thr Leu Leu Gln Phe Ala
 420 425 430

Val Val Glu Phe Ser Gly Ile Leu Thr Lys Glu
 435 440

<210> 10

<211> 123

<212> DNA

<213> Chlamydia psittaci

<400> 10
gagtttatcc aagagtatga aagttcttta aatgaagtca ttaaaactat ggcagcatcc 60
atcgctatgg atgtaaccga cgtgggttatt gaggttggtt tatcccatgt gatcagtc 120
gaa 123

<210> 11
<211> 41
<212> PRT
<213> Chlamydia psittaci

<400> 11
Glu Phe Ile Gln Glu Tyr Glu Ser Ser Leu Asn Glu Val Ile Lys Thr
1 5 10 15
Met Ala Ala Ser Ile Ala Met Asp Val Thr Asp Val Val Ile Glu Val
20 25 30
Gly Leu Ser His Val Ile Ser Pro Glu
35 40

<210> 12
<211> 303
<212> DNA
<213> Chlamydia psittaci

<400> 12
atgacacaac cctatgtaac tagagaagac attatacttc tggcgaagag ttcagctctg 60
gaattaagcg aagagtttat tcaagagtat gaaagttctt taaatgaagt cattaaaaact 120
atggcagcat ccacgctat ggatgtaacc gacgtgggta ttgaggttgg tttatcccat 180
gtgatcagtc ccgaagattt acgagaagat atcgttgcct caagtttctc tcgtgaggag 240
tttctaacta atgtccctga atccttaggg ggattagtaa aagtaccac agtcattaag 300
tag 303

<210> 13
<211> 100
<212> PRT
<213> Chlamydia psittaci

<400> 13
Met Thr Gln Pro Tyr Val Thr Arg Glu Asp Ile Ile Leu Leu Ala Lys
1 5 10 15
Ser Ser Ala Leu Glu Leu Ser Glu Glu Phe Ile Gln Glu Tyr Glu Ser
20 25 30
Ser Leu Asn Glu Val Ile Lys Thr Met Ala Ala Ser Ile Ala Met Asp
35 40 45
Val Thr Asp Val Val Ile Glu Val Gly Leu Ser His Val Ile Ser Pro
50 55 60

Glu Asp Leu Arg Glu Asp Ile Val Ala Ser Ser Phe Ser Arg Glu Glu
65 70 75 80

Phe Leu Thr Asn Val Pro Glu Ser Leu Gly Gly Leu Val Lys Val Pro
85 90 95

Thr Val Ile Lys
100

<210> 14
<211> 514
<212> DNA
<213> Chlamydia psittaci

<400> 14
gaaaagtgtg atgtgattgc gatgcctgta tgctcatgcc cagcattcgc cgatggcgaa 60
atccttgatc ctacctctct atatctccag gatatctata ccgtggctat gaatttagcc 120
tacctcccag ctatcgccgt tccttcaggg tttctcgag aagggtgcc tctaggattc 180
caggtgattg gacaaaaggg taaagatcaa caggtgtgcc aggtaggcta tagcttccaa 240
gaacattcag gaattaagaa tttataccct aaaggatgta acaaacttgt tgatggagag 300
gtgaaataat gagcgacgtt tatgctgatt gggaatccgt cataggtctt gaagtccacg 360
tagaattaaa cacaaaatct aaattgttca gttgtgcacg caaccgtttt ggagacgaac 420
ctaatacaaa catctctcct gtatgcaccg gcatgccggg gtcactgcca gtactgaata 480
aagaagcagt gagaaaggct gttttatttg gttg 514

<210> 15
<211> 102
<212> PRT
<213> Chlamydia psittaci

<400> 15
Glu Lys Cys Asp Val Ile Ala Met Pro Val Cys Ser Cys Pro Ala Phe
1 5 10 15

Ala Asp Gly Glu Ile Leu Asp Pro Thr Ser Leu Tyr Leu Gln Asp Ile
20 25 30

Tyr Thr Val Ala Met Asn Leu Ala Tyr Leu Pro Ala Ile Ala Val Pro
35 40 45

Ser Gly Phe Ser Arg Glu Gly Leu Pro Leu Gly Phe Gln Val Ile Gly
50 55 60

Gln Lys Gly Lys Asp Gln Gln Val Cys Gln Val Gly Tyr Ser Phe Gln
65 70 75 80

Glu His Ser Gly Ile Lys Asn Leu Tyr Pro Lys Gly Cys Asn Lys Leu
85 90 95

Val Asp Gly Glu Val Lys
100

<210> 16
 <211> 1476
 <212> DNA
 <213> Chlamydia psittaci

<400> 16
 atgtatcaga agagtgcctt agagttaaga aatgccgtag tgagtggaga gtcttcagct 60
 acagcaatag caaagtatct ttataataga ataaaaacag aagacaatca gataggagct 120
 tttctttctc tttgtgaaga aagagcttat gagaaagcag ctatcataga tgcgaaagtg 180
 ggcgcgaggag aacctttggg gaaactcgca ggtgtcccca tcgggataaa agataatatt 240
 catattcggg gtttgcgcac cacttggtgt tctaaaatgt tagaaaatta tatagcgcct 300
 tttgatgcta cagtcgtcga acggatagaa gctgaagatg gggtcatttt aggcaaactc 360
 aatatggatg agtttgctat gggatcgaca acgcagtatt ctgctttcca tcctacgaaa 420
 aatccttggg gtttatcctg tgtgccagga ggatcttcag ggggatccgc cgccgcagtt 480
 tctgcaagat tttgtcctat agcgttaggt tcggataccg gtggatctat acgtcagcca 540
 gcagcatttt gtggagttgt ggggtttaag cctcctatg gagccgtctc ccgttacggg 600
 ttagtcgctt ttgggtcttc attagatcag ataggccctt taacaacagt tgtcgaagat 660
 gtcgccttag ctatggatgt attcgcaggt aaggatgata gagatgcaac ttctcagaag 720
 ttttttacag gatctttcca agaggccttg tcttttagacg ttccgagttt gatcggcgtg 780
 cctatgggat ttttagacgg tttacgtgat gatgttaaag agaatttctt tgcctcttta 840
 agtatttttg aacgtcaggg tagccgcatt gttgaagtgg atcttaacat cttagatcac 900
 gctgtctctg tttactacat tgtcgcttct gcagaagccg caacaaatct tgcaagattt 960
 gatggtattc gttacggcta tcgttctcca gaagcgcata gtatagaaga tatttatacg 1020
 atctcccgcg tacaaggctt cgtaaggaa gtcattgcgt ggattctttt aggtaactat 1080
 gtgttatcca ctgagcgcca aaatgtctat tataagaaag gctccgcaat tcgagcaaaa 1140
 atcattcaag cttttcaaaa agcttatgaa aagtgtgatg tgattgcat gcctgtatgc 1200
 tcatgcccag cattcgccga tggcgaaatc cttgatccta cctctctata tctccaggat 1260
 atctataccg tggctatgaa tttagcctac ctcccagcta tcgccgttcc ttcagggttt 1320
 tctcgagaag ggctgcctct aggtattccag gtgattggac aaaagggtaa agatcaacag 1380
 gtgtgccagg taggctatag cttccaagaa cattcaggaa ttaagaattt ataccctaaa 1440
 ggatgtaaca aacttggtga tggagaggtg aaataa 1476

<210> 17
 <211> 491
 <212> PRT
 <213> Chlamydia psittaci

<400> 17
 Met Tyr Gln Lys Ser Ala Leu Glu Leu Arg Asn Ala Val Val Ser Gly
 1 5 10 15
 Glu Ser Ser Ala Thr Ala Ile Ala Lys Tyr Phe Tyr Asn Arg Ile Lys
 20 25 30
 Thr Glu Asp Asn Gln Ile Gly Ala Phe Leu Ser Leu Cys Glu Glu Arg
 35 40 45
 Ala Tyr Glu Lys Ala Ala Ile Ile Asp Ala Lys Val Ala Arg Gly Glu
 50 55 60
 Pro Leu Gly Lys Leu Ala Gly Val Pro Ile Gly Ile Lys Asp Asn Ile
 65 70 75 80

His Ile Arg Gly Leu Arg Thr Thr Cys Ala Ser Lys Met Leu Glu Asn
85 90 95

Tyr Ile Ala Pro Phe Asp Ala Thr Val Val Glu Arg Ile Glu Ala Glu
100 105 110

Asp Gly Val Ile Leu Gly Lys Leu Asn Met Asp Glu Phe Ala Met Gly
115 120 125

Ser Thr Thr Gln Tyr Ser Ala Phe His Pro Thr Lys Asn Pro Trp Gly
130 135 140

Leu Ser Cys Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala Ala Val
145 150 155 160

Ser Ala Arg Phe Cys Pro Ile Ala Leu Gly Ser Asp Thr Gly Gly Ser
165 170 175

Ile Arg Gln Pro Ala Ala Phe Cys Gly Val Val Gly Phe Lys Pro Ser
180 185 190

Tyr Gly Ala Val Ser Arg Tyr Gly Leu Val Ala Phe Gly Ser Ser Leu
195 200 205

Asp Gln Ile Gly Pro Leu Thr Thr Val Val Glu Asp Val Ala Leu Ala
210 215 220

Met Asp Val Phe Ala Gly Lys Asp Asp Arg Asp Ala Thr Ser Gln Lys
225 230 235 240

Phe Phe Thr Gly Ser Phe Gln Glu Ala Leu Ser Leu Asp Val Pro Ser
245 250 255

Leu Ile Gly Val Pro Met Gly Phe Leu Asp Gly Leu Arg Asp Asp Val
260 265 270

Lys Glu Asn Phe Phe Ala Ser Leu Ser Ile Leu Glu Arg Gln Gly Ser
275 280 285

Arg Ile Val Glu Val Asp Leu Asn Ile Leu Asp His Ala Val Ser Val
290 295 300

Tyr Tyr Ile Val Ala Ser Ala Glu Ala Ala Thr Asn Leu Ala Arg Phe
305 310 315 320

Asp Gly Ile Arg Tyr Gly Tyr Arg Ser Pro Glu Ala His Ser Ile Glu
325 330 335

Asp Ile Tyr Thr Ile Ser Arg Val Gln Gly Phe Gly Lys Glu Val Met
340 345 350

Arg Arg Ile Leu Leu Gly Asn Tyr Val Leu Ser Thr Glu Arg Gln Asn
355 360 365

Val Tyr Tyr Lys Lys Gly Ser Ala Ile Arg Ala Lys Ile Ile Gln Ala
370 375 380

Phe Gln Lys Ala Tyr Glu Lys Cys Asp Val Ile Ala Met Pro Val Cys
385 390 395 400

Ser Cys Pro Ala Phe Ala Asp Gly Glu Ile Leu Asp Pro Thr Ser Leu
405 410 415

Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr Leu Pro
420 425 430

Ala Ile Ala Val Pro Ser Gly Phe Ser Arg Glu Gly Leu Pro Leu Gly
435 440 445

Phe Gln Val Ile Gly Gln Lys Gly Lys Asp Gln Gln Val Cys Gln Val
450 455 460

Gly Tyr Ser Phe Gln Glu His Ser Gly Ile Lys Asn Leu Tyr Pro Lys
465 470 475 480

Gly Cys Asn Lys Leu Val Asp Gly Glu Val Lys
485 490

<210> 18

<211> 1464

<212> DNA

<213> Chlamydia psittaci

<400> 18

```
atgagcgacg tttatgctga ttgggaatcc gtcataggtc ttgaagtcca cgtagaatta 60
aacacaaaat ctaaattgtt cagttgtgca cgcaaccgtt ttggagacga acctaataca 120
aacatctctc ctgtatgcac cggcatgccg gggctcactgc cagtactgaa taaagaagca 180
gtgagaaaagg ctgttttatt tggttgtgct gttgaaggcg aagtagcttt gctcagccgt 240
tttgatagaa agtcctatth ttatcccgat agcccaagga attttcaaht taccqaattc 300
gaacatccta ttgtgcbagg aggacatata aaagctatcg ttcacgggtga ggaacgtcat 360
tttgaactgg ctcaagcgca tatcgaagat gatgccggta tgctaaaaca tttcggagaa 420
tttgctggag tagattataa ccgcgctggt gtacctttaa tagagattgt gtctaagccg 480
tgcattgttt gtgctgatga tgctgttgct tatgccacag ctttggtatc cttattagac 540
tacataggca tttctgactg taatatggaa gaaggctcgg tacgctttga tgtaaacata 600
tccgtacgtc ctaaaggtag cgaagaacta cgcaataaag tagaaattaa aaatatgaac 660
tcctttgctt ttatggccca agctctagaa gccgagcgtt gtcgtcagat cgatgcata 720
ttagacaatc caaatgcaga ccccaaaact gttattccag gagcgacata ccgttgggat 780
cctgaaaaga aaaaaacagt gttgatgcgt cttaaaggaac gagctgaaga ttacaagtat 840
ttcatagagc ctgatctccc agtattgcaa ttaacagaag catatattga tgaaattcgt 900
catacgcttc ccgagctccc tttcaacaaa taccaaaggt atttgcacga atatgctctt 960
gccgaagaca tcgctgccat tttaattagc gataagcata gtgcgcactt ctttgaatta 1020
gccgctcagg aatgtaaaaa ctacagagcc ctttctaatt ggttaactgt tgagtttgcc 1080
ggacgttgta aactcaaggg taagaatctc gctttctcag gtatcctgcc cagtagtgta 1140
gctcagcttg tgaattttat tgatcaaggc gtgattaccg gaaagatcgc taaggatatc 1200
gcagacatga tgatggaatc tctgaaaag agtcctgaga ctatcctcaa agaaaatcct 1260
gaaatgttgc ccatgacaga tgaaagtgcg ttggtggcga tcatttccga ggtgattacc 1320
```

gcaaatccgc agtctgtcgt agactacaaa agtggttaaga ccaaggcggtt aggattttta 1380
 gttggggcaaa ttatgaaacg taccaggggc aaggcccctc caaatagggt aaatgaactt 1440
 ttgcttgtgg aattaagtaa ataa 1464

<210> 19

<211> 487

<212> PRT

<213> Chlamydia psittaci

<400> 19

Met Ser Asp Val Tyr Ala Asp Trp Glu Ser Val Ile Gly Leu Glu Val
 1 5 10 15

His Val Glu Leu Asn Thr Lys Ser Lys Leu Phe Ser Cys Ala Arg Asn
 20 25 30

Arg Phe Gly Asp Glu Pro Asn Thr Asn Ile Ser Pro Val Cys Thr Gly
 35 40 45

Met Pro Gly Ser Leu Pro Val Leu Asn Lys Glu Ala Val Arg Lys Ala
 50 55 60

Val Leu Phe Gly Cys Ala Val Glu Gly Glu Val Ala Leu Leu Ser Arg
 65 70 75 80

Phe Asp Arg Lys Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln
 85 90 95

Ile Thr Gln Phe Glu His Pro Ile Val Arg Gly Gly His Ile Lys Ala
 100 105 110

Ile Val His Gly Glu Glu Arg His Phe Glu Leu Ala Gln Ala His Ile
 115 120 125

Glu Asp Asp Ala Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val
 130 135 140

Asp Tyr Asn Arg Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro
 145 150 155 160

Cys Met Phe Cys Ala Asp Asp Ala Val Ala Tyr Ala Thr Ala Leu Val
 165 170 175

Ser Leu Leu Asp Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Glu Gly
 180 185 190

Ser Val Arg Phe Asp Val Asn Ile Ser Val Arg Pro Lys Gly Ser Glu
 195 200 205

Glu Leu Arg Asn Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe
 210 215 220

Met Ala Gln Ala Leu Glu Ala Glu Arg Cys Arg Gln Ile Asp Ala Tyr

25103618.1

225		230		235		240
Leu Asp Asn Pro	Asn Ala Asp Pro Lys Thr Val Ile Pro Gly Ala Thr					
	245		250		255	
Tyr Arg Trp Asp Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys						
	260		265		270	
Glu Arg Ala Glu Asp Tyr Lys Tyr Phe Ile Glu Pro Asp Leu Pro Val						
	275		280		285	
Leu Gln Leu Thr Glu Ala Tyr Ile Asp Glu Ile Arg His Thr Leu Pro						
	290		295		300	
Glu Leu Pro Phe Asn Lys Tyr Gln Arg Tyr Leu His Glu Tyr Ala Leu						
	305		310		315	320
Ala Glu Asp Ile Ala Ala Ile Leu Ile Ser Asp Lys His Ser Ala His						
	325		330		335	
Phe Phe Glu Leu Ala Ala Gln Glu Cys Lys Asn Tyr Arg Ala Leu Ser						
	340		345		350	
Asn Trp Leu Thr Val Glu Phe Ala Gly Arg Cys Lys Leu Lys Gly Lys						
	355		360		365	
Asn Leu Ala Phe Ser Gly Ile Leu Pro Ser Ser Val Ala Gln Leu Val						
	370		375		380	
Asn Phe Ile Asp Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Asp Ile						
	385		390		395	400
Ala Asp Met Met Met Glu Ser Pro Glu Lys Ser Pro Glu Thr Ile Leu						
	405		410		415	
Lys Glu Asn Pro Glu Met Leu Pro Met Thr Asp Glu Ser Ala Leu Val						
	420		425		430	
Ala Ile Ile Ser Glu Val Ile Thr Ala Asn Pro Gln Ser Val Val Asp						
	435		440		445	
Tyr Lys Ser Gly Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile						
	450		455		460	
Met Lys Arg Thr Gln Gly Lys Ala Pro Pro Asn Arg Val Asn Glu Leu						
	465		470		475	480
Leu Leu Val Glu Leu Ser Lys						
	485					

<210> 20
 <211> 379
 <212> DNA

<213> Chlamydia psittaci

<400> 20

```
tatttagtgt cgaaaaacaa cgccaacatt tacgcagggt ctctctatta tcagcatatc 60
tcctattgga gcgcttggca gaatctgcta caaaacacta tcggtgcaga agctccgtta 120
gtccttaacg cacagttaac ttattgtcat gcttcaaacy acatgaaaac caacatgacg 180
actacttacg ctccctgtaa aacaacgtat gcagaaatca aggggtgattg gggtaacgat 240
tgtttcggag tcgagcttgg tgcaactgtg cctatccaaa cagaatcttc tctcctattc 300
gatatgtact cacctttcct gaagtttcaa cttgtgcata cgcaccaaga tgactttaag 360
gaaaacaata gcgatcagg                                     379
```

<210> 21

<211> 126

<212> PRT

<213> Chlamydia psittaci

<400> 21

```
Tyr Leu Val Ser Lys Asn Asn Ala Asn Ile Tyr Ala Gly Ser Leu Tyr
  1             5             10             15

Tyr Gln His Ile Ser Tyr Trp Ser Ala Trp Gln Asn Leu Leu Gln Asn
      20             25             30

Thr Ile Gly Ala Glu Ala Pro Leu Val Leu Asn Ala Gln Leu Thr Tyr
      35             40             45

Cys His Ala Ser Asn Asp Met Lys Thr Asn Met Thr Thr Thr Tyr Ala
      50             55             60

Pro Arg Lys Thr Thr Tyr Ala Glu Ile Lys Gly Asp Trp Gly Asn Asp
      65             70             75             80

Cys Phe Gly Val Glu Leu Gly Ala Thr Val Pro Ile Gln Thr Glu Ser
      85             90             95

Ser Leu Leu Phe Asp Met Tyr Ser Pro Phe Leu Lys Phe Gln Leu Val
      100            105            110

His Thr His Gln Asp Asp Phe Lys Glu Asn Asn Ser Asp Gln
      115            120            125
```

<210> 22

<211> 2520

<212> DNA

<213> Chlamydia psittaci

<400> 22

```
atgaaacatc cagtctactg gttcttaata tctcagagcc tatttgccctc gaattctttg 60
agcttcgcta acgacgctca aacagcctta actccctccg atagctataa tggaaatgtg 120
acctctgagg agttccagggt aaaagaaact tcatcaggaa caacgtatac ttgtgaaggc 180
aatgtgtgta tctcctttgc agggaaagat tcagggtctaa agaaaagttg tttctcagct 240
actgataacc ttaccttcct aggaaacggg tatactcttt gctttgataa tattactact 300
```

```

acagctagta accccggagc cattaatggt caaggtcaag gaaaaacctt aggcattctca 360
ggatttttctt tatttttcatg tgcttattgt cctccaggca caactgggta cggagctata 420
cagactaaag gcaacacaac tttaaaagat aactctagtc ttgtcttcca taaaaactgc 480
tcaacagcag aaggtggggc tatccagtggt aaaggaagca gtgatgctga attaaaaata 540
gaaaataatc agaattcggg tttctcagaa aactcctcca cttcaaaagg cggggctatt 600
tatgctgata aactcaccat tgtctcaggt gggcctacat tatttttctaa caactctgta 660
tccaacgggt catcccttaa aggcggagct attagcataa aagattcaag tggatgaatgt 720
agcctaaccg ctgatctcgg agatattacc ttcgatggga acaaaatcat caaaactagt 780
ggatggaagt ctacagtaac aagaaattcc atagatctcg gcacagggaa atttacaag 840
ctacgtgcta aagacggctt cggaattttt ttctatgacc ctattactgg gggaggatct 900
gatgaactaa acattaataa aaaagaaact gttgattata caggaaagat cgtcttctca 960
ggatgaaaaat tatccgatga agaaaaagca cgagcggaaa acctagcttc tactttcaac 1020
caacccatca cattatcagc aggatctctt gtacttaaag atgggtgtatc tgtaaccgca 1080
aaacaagtaa cgcaggaagc gggatctacc gttgtcatgg atctagggac cacattacag 1140
acgccttctt caggtggaga aaccatcacc ctaactaatc tagatattaa catcgctctg 1200
ttgggggggg ggggggggtac ctctcctgct aaactcgcaa caaatcacgc aagtcaagct 1260
ataactatta acgctgtcaa tctagtcgat gctgatggca atgcttatga agatcctatt 1320
cttgctacgt ctaaaccctt cacagcaata gtagctacaa ctaacgctag tacagtcaca 1380
cagcctacag ataactaac aaattatgtc cctcctactc attacgggta ccaaggaaat 1440
tggacagtaa cttgggacac cgaaacagct acaaaaacag ccactctaac ttgggaacaa 1500
actggctact cccctaacc agaacgtcaa ggacctttag tccgaatac tctttgggg 1560
gcattctctg acctcagagc tatacaaaac ttaatggata ttagcgtcaa tggcgtgac 1620
taccatagag gtttttgggt atccgggtcta gctaacttct tacacaaaag tggctctgat 1680
actaaacgca agttccgtca caatagcgcc ggatacgctt taggcgtcta cgaaaaact 1740
ccttctgatg atattttcag tgcggctttc tgccaactct tcggaaggaa caaagactat 1800
ttagtgctga aaaacaacgc caacatttac gcaggttctc tctattatca gcatactctc 1860
tattggagcg cttggcagaa tctgctacaa aacactatcg gtgcagaagc tccgttagtc 1920
cttaacgcac agttaactta ttgtcatgct tcaaacgaca tgaaaaccaa catgacgact 1980
acttacgctc ctcgtaaaac aacgtatgca gaaatcaagg gtgattgggg taacgattgt 2040
ttcggagtcg agcttgggtc aactgtgctt atccaaacag aatcttctct cctattcgat 2100
atgtactcac ctttctgtaa gtttcaactt gtgcatacgc accaagatga ctttaaggaa 2160
aacaatagcg atcaggggaag atacttcgaa agcagcaatc tcaccaacct ttctctgcct 2220
atcggcatca agtttgagag atttgctaac aacgatacag cttcttatca tgtactgct 2280
gcttattctc ctgatatcgt aagaagtaac cctgactgta ctacttctct gtttagtaagc 2340
cccgactctg ctgtctgggt aacgaaagcc aacaaccttg cgcgaagcgc cttcatgcta 2400
caagcaggaa actacttgct tttaagtcac aacatagaaa tcttcagcca gttcggtttc 2460
gagctcaggg gatcttcacg aacctataac gtagatctcg gatcgaagat ccagttctaa 2520

```

<210> 23

<211> 839

<212> PRT

<213> Chlamydia psittaci

<400> 23

Met Lys His Pro Val Tyr Trp Phe Leu Ile Ser Ser Ser Leu Phe Ala
1 5 10 15

Ser Asn Ser Leu Ser Phe Ala Asn Asp Ala Gln Thr Ala Leu Thr Pro
20 25 30

Ser Asp Ser Tyr Asn Gly Asn Val Thr Ser Glu Glu Phe Gln Val Lys
35 40 45

Ser Thr Phe Asn Gln Pro Ile Thr Leu Ser Ala Gly Ser Leu Val Leu
 340 345 350
 Lys Asp Gly Val Ser Val Thr Ala Lys Gln Val Thr Gln Glu Ala Gly
 355 360 365
 Ser Thr Val Val Met Asp Leu Gly Thr Thr Leu Gln Thr Pro Ser Ser
 370 375 380
 Gly Gly Glu Thr Ile Thr Leu Thr Asn Leu Asp Ile Asn Ile Ala Ser
 385 390 395 400
 Leu Gly Gly Gly Gly Gly Thr Ser Pro Ala Lys Leu Ala Thr Asn Thr
 405 410 415
 Ala Ser Gln Ala Ile Thr Ile Asn Ala Val Asn Leu Val Asp Ala Asp
 420 425 430
 Gly Asn Ala Tyr Glu Asp Pro Ile Leu Ala Thr Ser Lys Pro Phe Thr
 435 440 445
 Ala Ile Val Ala Thr Thr Asn Ala Ser Thr Val Thr Gln Pro Thr Asp
 450 455 460
 Asn Leu Thr Asn Tyr Val Pro Pro Thr His Tyr Gly Tyr Gln Gly Asn
 465 470 475 480
 Trp Thr Val Thr Trp Asp Thr Glu Thr Ala Thr Lys Thr Ala Thr Leu
 485 490 495
 Thr Trp Glu Gln Thr Gly Tyr Ser Pro Asn Pro Glu Arg Gln Gly Pro
 500 505 510
 Leu Val Pro Asn Thr Leu Trp Gly Ala Phe Ser Asp Leu Arg Ala Ile
 515 520 525
 Gln Asn Leu Met Asp Ile Ser Val Asn Gly Ala Asp Tyr His Arg Gly
 530 535 540
 Phe Trp Val Ser Gly Leu Ala Asn Phe Leu His Lys Ser Gly Ser Asp
 545 550 555 560
 Thr Lys Arg Lys Phe Arg His Asn Ser Ala Gly Tyr Ala Leu Gly Val
 565 570 575
 Tyr Ala Lys Thr Pro Ser Asp Asp Ile Phe Ser Ala Ala Phe Cys Gln
 580 585 590
 Leu Phe Gly Lys Asp Lys Asp Tyr Leu Val Ser Lys Asn Asn Ala Asn
 595 600 605
 Ile Tyr Ala Gly Ser Leu Tyr Tyr Gln His Ile Ser Tyr Trp Ser Ala
 610 615 620

Trp Gln Asn Leu Leu Gln Asn Thr Ile Gly Ala Glu Ala Pro Leu Val
 625 630 635 640
 Leu Asn Ala Gln Leu Thr Tyr Cys His Ala Ser Asn Asp Met Lys Thr
 645 650 655
 Asn Met Thr Thr Thr Tyr Ala Pro Arg Lys Thr Thr Tyr Ala Glu Ile
 660 665 670
 Lys Gly Asp Trp Gly Asn Asp Cys Phe Gly Val Glu Leu Gly Ala Thr
 675 680 685
 Val Pro Ile Gln Thr Glu Ser Ser Leu Leu Phe Asp Met Tyr Ser Pro
 690 695 700
 Phe Leu Lys Phe Gln Leu Val His Thr His Gln Asp Asp Phe Lys Glu
 705 710 715 720
 Asn Asn Ser Asp Gln Gly Arg Tyr Phe Glu Ser Ser Asn Leu Thr Asn
 725 730 735
 Leu Ser Leu Pro Ile Gly Ile Lys Phe Glu Arg Phe Ala Asn Asn Asp
 740 745 750
 Thr Ala Ser Tyr His Val Thr Ala Ala Tyr Ser Pro Asp Ile Val Arg
 755 760 765
 Ser Asn Pro Asp Cys Thr Thr Ser Leu Leu Val Ser Pro Asp Ser Ala
 770 775 780
 Val Trp Val Thr Lys Ala Asn Asn Leu Ala Arg Ser Ala Phe Met Leu
 785 790 795 800
 Gln Ala Gly Asn Tyr Leu Ser Leu Ser His Asn Ile Glu Ile Phe Ser
 805 810 815
 Gln Phe Gly Phe Glu Leu Arg Gly Ser Ser Arg Thr Tyr Asn Val Asp
 820 825 830
 Leu Gly Ser Lys Ile Gln Phe
 835

<210> 24

<211> 1039

<212> DNA

<213> Chlamydia psittaci

<400> 24

aaacgttttc atattaatgg ggttcctgaa tggctctttat ctacgcctta ttctcttgct 60
 atgggggtata atatcttggc tacgggagtg cagatgggta aagcctatgc cattcttgcc 120
 aacgggtggtt atgatgtgcg ccctaccttg ataaaaaaaa tagtcactac ttctggaaaa 180
 gagtacgtgt tgcatacctca agttcgtgga gaaagaattc tttctcagga cattgtggat 240
 gaggtattga aagctacgcg ttttactacc tctcctggag gaacggggatt tcgggctgcg 300

```

cctaaaaagc attccagtgc agggaaaaaca ggaacaacag aaaagctagt tcatggaaag 360
tatgataagc atcggcatat ttcttcattt ataggtatca cgccgatata cccttcggca 420
gggggggagtg ttcttttggc catgcttgct tctatcagtt atacgaccga caacggtagt 480
caagtgtacg tcgttcaatt gcgacatgag ggtatcgaaa tctgtcgtca attcgtccat 540
gttaacctaa ttgtgtggctc attatcgctt tctttatact acttaccgta gttcctacgg 600
atactagcaa aaagttctgc tctttgcgctt gctctttgaa cagcatactg tactttttaa 660
aagtctgcta aattttcccg ttctccattc ctatctgaga agtagagaag ggctctattt 720
aacacttctt ctccagaaga caccacaattg accatcttac gggcaacgga ctctgtgttct 780
tcttcttttt tggtttgtaa gttttgttgc gtatgctcag ctatatcatt cagatcacca 840
ttgattaaat caatgatcac actgacagct tcaaaatggt cttgcgatag tttattttga 900
tcttggttga gagtggattg tgcattccat aaacgctctt ttagattggt tatttgctct 960
ttcagctctt ccgaatctaa cgctctctcc agttcaggat cgataatggt agagtttctg 1020
tcttgcatac tcgccatag                                     1039

```

<210> 25

<211> 196

<212> PRT

<213> Chlamydia psittaci

<400> 25

```

Lys Arg Phe His Ile Asn Gly Val Pro Glu Trp Ser Leu Ser Thr Pro
  1             5             10             15

```

```

Tyr Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Val Gln Met
          20             25             30

```

```

Val Lys Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Asp Val Arg Pro
          35             40             45

```

```

Thr Leu Ile Lys Lys Ile Val Thr Thr Ser Gly Lys Glu Tyr Val Leu
          50             55             60

```

```

His Pro Gln Val Arg Gly Glu Arg Ile Leu Ser Gln Asp Ile Val Asp
          65             70             75             80

```

```

Glu Val Leu Lys Ala Thr Arg Phe Thr Thr Tyr Pro Gly Gly Thr Gly
          85             90             95

```

```

Phe Arg Ala Ala Pro Lys Lys His Ser Ser Ala Gly Lys Thr Gly Thr
          100            105            110

```

```

Thr Glu Lys Leu Val His Gly Lys Tyr Asp Lys His Arg His Ile Ser
          115            120            125

```

```

Ser Phe Ile Gly Ile Thr Pro Ile Tyr Pro Ser Ala Gly Gly Ser Val
          130            135            140

```

```

Pro Leu Val Met Leu Val Ser Ile Ser Tyr Thr Thr Asp Asn Gly Ser
          145            150            155            160

```

```

Gln Val Tyr Val Val Gln Leu Arg His Glu Gly Ile Glu Ile Cys Arg
          165            170            175

```

Gln Phe Val His Val Asn Leu Ile Val Trp Ser Leu Ser Leu Ser Leu
 180 185 190

Tyr Tyr Leu Pro
 195

<210> 26
 <211> 1950
 <212> DNA
 <213> Chlamydia psittaci

<400> 26
 atgaatcacc gtaaattgctt aaccatgatt acctatggag ttctgctctc ctattctttc 60
 ctgatcatac ggtattataa aattcagatt tgtgaggaga aacgttgggc agcagaagct 120
 ttaggacaac atgaatttcg agtaaaggac ccttttcgta gggggacgtt tttttctcag 180
 atgaatttac gtaagggaga ttcagagcaa cgacaagctc tggccgtgga cattacgaaa 240
 tttcatcttt gtttagatgc tgtagctggt cctgaagaac accgtgatgt gattgctaag 300
 aaagttttta gtctcattgg agaaggatgat tatgacaaaac tccgtgcgga gtttgataaa 360
 aaatctcgtc atcgaaagtt atttctttgg ttagatcgtg cggatcatga ccgcacccctg 420
 tcttggtggc gggggtacgc agcaaaatct aaaataccct cgaatgcttt gtttttcatg 480
 accgactatc aaagatctta tccctttggc aaacttttag gccaaagtct acatactctg 540
 agagaagtca aggatgagaa aacaggcaaa gctttcccta caggagggtt agaagcctat 600
 ttttaaccacg tccttgaagg agagccaggga gaacggaaat tcctacgttc tcctttaaat 660
 cgttttagatc tagataaagt cacaagatt cctagggatg gttcggatat ttatctcaca 720
 gtcaatccct gtatacagac tatagcggaa gaggaattag aaaaaggggt aaaggaagcc 780
 aaagctaaag gtgggcgtct aattttaatg aatgcttata caggcgagat tcttgcttta 840
 gcacagtatc ctttctttaa tccttcggaa tacaaggaat ttttcaatga taaggaaaaa 900
 atagagcaca caaaagtaac atcagtcagt gatgtgtttg aaccgggctc tatcatgaaa 960
 cctctgactc tggctatagc gttgctggcc aacgaagaga tggtgaaaag atcaggaaaag 1020
 cccttatttg atcctaataa acctatagat gtaaccgcga ggattttccc aggaagaaaag 1080
 caatttccgc ttaaggatat ctcatcgaat cggcggttaa atatgtacat ggcgattcaa 1140
 aagtcttcga acgtttatgt agcgcaactt gctgatctta tagtgcaaca tctagggaac 1200
 cactgggatg aagacaagtt attgttatta ggatttggta aaaagacggg gatagaattg 1260
 ccaggggaag cgtcaggatt ggtaccttca cctaaacgtt ttcataattaa tgggggttcct 1320
 gaatggtctt tatctacgcc ttattctctt gctatggggg ataatatctt ggctacggga 1380
 gtgcagatgg ttaaagccta tgccattctt gccaacgggt gttatgatgt gcgccctacc 1440
 ttgataaaaa aaatagtcac tacttctgga aaagagtacg tgttgcaccc tcaagttcgt 1500
 ggagaaaagaa ttctttctca ggacattgtg gatgaggtat tgaaagctac gcgttttact 1560
 acctatcctg gaggaacggg atttcgggct gcgcctaaaa agcattccag tgcagggaaa 1620
 acaggaacaa cagaaaagct agttcatgga aagtatgata agcatcggca tatttcttca 1680
 tttataggta tcacgccgat atacccttcg gcagggggga gtgttccttt ggtcatgctt 1740
 gtctctatag atgacctga tcattgtggt cgcgaggatg gaacaaagaa ctatatggga 1800
 ggccgatgtg ccgcccctgt atttggcaga gttgcggatc gtgttttatc ttatctagga 1860
 gttcccgaag ataaagaaaa atacagttat cagagtgagg tggctgctat gaaagctttg 1920
 tatgaggaat ggaatcggtc ggggaaataa 1950

<210> 27
 <211> 649
 <212> PRT
 <213> Chlamydia psittaci

<400> 27

Met	Asn	His	Arg	Lys	Cys	Leu	Thr	Met	Ile	Thr	Tyr	Gly	Val	Leu	Leu	1	5	10	15
Ser	Tyr	Ser	Phe	Leu	Ile	Ile	Arg	Tyr	Tyr	Lys	Ile	Gln	Ile	Cys	Glu	20	25	30	
Glu	Lys	Arg	Trp	Ala	Ala	Glu	Ala	Leu	Gly	Gln	His	Glu	Phe	Arg	Val	35	40	45	
Lys	Asp	Pro	Phe	Arg	Arg	Gly	Thr	Phe	Phe	Ser	Gln	Met	Asn	Leu	Arg	50	55	60	
Lys	Gly	Asp	Ser	Glu	Gln	Arg	Gln	Ala	Leu	Ala	Val	Asp	Ile	Thr	Lys	65	70	75	80
Phe	His	Leu	Cys	Leu	Asp	Ala	Val	Ala	Val	Pro	Glu	Glu	His	Arg	Asp	85	90	95	
Val	Ile	Ala	Lys	Lys	Val	Phe	Ser	Leu	Ile	Gly	Glu	Gly	Asp	Tyr	Asp	100	105	110	
Lys	Leu	Arg	Ala	Glu	Phe	Asp	Lys	Lys	Ser	Arg	Tyr	Arg	Lys	Leu	Phe	115	120	125	
Leu	Trp	Leu	Asp	Arg	Ala	Asp	His	Asp	Arg	Ile	Leu	Ser	Trp	Trp	Arg	130	135	140	
Gly	Tyr	Ala	Ala	Lys	Ser	Lys	Ile	Pro	Ser	Asn	Ala	Leu	Phe	Phe	Met	145	150	155	160
Thr	Asp	Tyr	Gln	Arg	Ser	Tyr	Pro	Phe	Gly	Lys	Leu	Leu	Gly	Gln	Val	165	170	175	
Leu	His	Thr	Leu	Arg	Glu	Val	Lys	Asp	Glu	Lys	Thr	Gly	Lys	Ala	Phe	180	185	190	
Pro	Thr	Gly	Gly	Leu	Glu	Ala	Tyr	Phe	Asn	His	Val	Leu	Glu	Gly	Glu	195	200	205	
Pro	Gly	Glu	Arg	Lys	Phe	Leu	Arg	Ser	Pro	Leu	Asn	Arg	Leu	Asp	Leu	210	215	220	
Asp	Lys	Val	Thr	Lys	Ile	Pro	Arg	Asp	Gly	Ser	Asp	Ile	Tyr	Leu	Thr	225	230	235	240
Val	Asn	Pro	Cys	Ile	Gln	Thr	Ile	Ala	Glu	Glu	Glu	Leu	Glu	Lys	Gly	245	250	255	
Val	Lys	Glu	Ala	Lys	Ala	Lys	Gly	Gly	Arg	Leu	Ile	Leu	Met	Asn	Ala	260	265	270	
Tyr	Thr	Gly	Glu	Ile	Leu	Ala	Leu	Ala	Gln	Tyr	Pro	Phe	Phe	Asn	Pro	275	280	285	

Ser	Glu	Tyr	Lys	Glu	Phe	Phe	Asn	Asp	Lys	Glu	Lys	Ile	Glu	His	Thr	290	295	300	
Lys	Val	Thr	Ser	Val	Ser	Asp	Val	Phe	Glu	Pro	Gly	Ser	Ile	Met	Lys	305	310	315	320
Pro	Leu	Thr	Leu	Ala	Ile	Ala	Leu	Leu	Ala	Asn	Glu	Glu	Met	Val	Lys	325	330	335	
Arg	Ser	Gly	Lys	Pro	Leu	Phe	Asp	Pro	Asn	Glu	Pro	Ile	Asp	Val	Thr	340	345	350	
Arg	Arg	Ile	Phe	Pro	Gly	Arg	Lys	Gln	Phe	Pro	Leu	Lys	Asp	Ile	Ser	355	360	365	
Ser	Asn	Arg	Arg	Leu	Asn	Met	Tyr	Met	Ala	Ile	Gln	Lys	Ser	Ser	Asn	370	375	380	
Val	Tyr	Val	Ala	Gln	Leu	Ala	Asp	Leu	Ile	Val	Gln	His	Leu	Gly	Asn	385	390	395	400
His	Trp	Tyr	Glu	Asp	Lys	Leu	Leu	Leu	Leu	Gly	Phe	Gly	Lys	Lys	Thr	405	410	415	
Gly	Ile	Glu	Leu	Pro	Gly	Glu	Ala	Ser	Gly	Leu	Val	Pro	Ser	Pro	Lys	420	425	430	
Arg	Phe	His	Ile	Asn	Gly	Val	Pro	Glu	Trp	Ser	Leu	Ser	Thr	Pro	Tyr	435	440	445	
Ser	Leu	Ala	Met	Gly	Tyr	Asn	Ile	Leu	Ala	Thr	Gly	Val	Gln	Met	Val	450	455	460	
Lys	Ala	Tyr	Ala	Ile	Leu	Ala	Asn	Gly	Gly	Tyr	Asp	Val	Arg	Pro	Thr	465	470	475	480
Leu	Ile	Lys	Lys	Ile	Val	Thr	Thr	Ser	Gly	Lys	Glu	Tyr	Val	Leu	His	485	490	495	
Pro	Gln	Val	Arg	Gly	Glu	Arg	Ile	Leu	Ser	Gln	Asp	Ile	Val	Asp	Glu	500	505	510	
Val	Leu	Lys	Ala	Thr	Arg	Phe	Thr	Thr	Tyr	Pro	Gly	Gly	Thr	Gly	Phe	515	520	525	
Arg	Ala	Ala	Pro	Lys	Lys	His	Ser	Ser	Ala	Gly	Lys	Thr	Gly	Thr	Thr	530	535	540	
Glu	Lys	Leu	Val	His	Gly	Lys	Tyr	Asp	Lys	His	Arg	His	Ile	Ser	Ser	545	550	555	560
Phe	Ile	Gly	Ile	Thr	Pro	Ile	Tyr	Pro	Ser	Ala	Gly	Gly	Ser	Val	Pro	565	570	575	

Leu Val Met Leu Val Ser Ile Asp Asp Pro Asp His Cys Val Arg Glu
580 585 590

Asp Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala Ala Pro Val Phe
595 600 605

Gly Arg Val Ala Asp Arg Val Leu Ser Tyr Leu Gly Val Pro Glu Asp
610 615 620

Lys Glu Lys Tyr Ser Tyr Gln Ser Glu Val Ala Ala Met Lys Ala Leu
625 630 635 640

Tyr Glu Glu Trp Asn Arg Ser Gly Lys
645

<210> 28

<211> 960

<212> DNA

<213> Chlamydia psittaci

<400> 28

atgttcaata agctcattga aacagcacag aaacgggtgg aagcaagaaa ctatactatt 60
cgaaagcata ctcttgagta tgacgatgtt atgaataggc aaaggcagac gatctatgct 120
tttcgtaatg acgttatccg ctctgaagat atctttgggt tagctaagga agcaatatct 180
catgttgcat taatgatcgc ttcgttgata gtgagccgtg atcatcctac aggggaattct 240
cttcctaggc tggagaagaatg gatgaactat tctttcccac tgcaattgaa tattgaagaa 300
ttgaaaagat tgaagtctat agatgccatt gccgaacggg ttgctgatga tctcatagaa 360
gttttccaga ataagtttgc ttctatggtg caggaaatta ccgaagcagc cggagaaaaa 420
gtcgaatgcta atggtgtctg taaagatgtt attcgcctcg tcatgattat gcatatcgat 480
gagcagtggg aaattcatct ttagatatg gatttattac gtagtgaagt aggtttacgt 540
actgtcggtc agaaagaccc tcttatcgaa tttaaacatg agtcgttctt actattcgaa 600
agtcttattc gcgatattcg tattgtctatt gtaaagcatt tgttccgttt agagttgacg 660
atgactagag aacagcggcc tcaaaatgtc gtgcctgttg ttgccacatc tttccaaaat 720
aatgaaaatt tcggtccttt ggaactcaca gttatcagtg attctgacga tgaataaaaa 780
gagctttagg gctgggctag ctccagcct tttcccttac gttattgatt tatagtttta 840
aataaatacg gaccactcag accaggattg tgtgtcgtgg tggcgtatcc aaaatgttct 900
gtgattatcc tcaatcagaa attgtacatg atgatcgca ttgcgtgttg tcatgcaaat 960

<210> 29

<211> 258

<212> PRT

<213> Chlamydia psittaci

<400> 29

Met Phe Asn Lys Leu Ile Glu Thr Ala Gln Lys Arg Val Glu Ala Arg
1 5 10 15

Asn Tyr Thr Ile Arg Lys His Thr Leu Glu Tyr Asp Asp Val Met Asn
20 25 30

Arg Gln Arg Gln Thr Ile Tyr Ala Phe Arg Asn Asp Val Ile Arg Ser
35 40 45

Glu Asp Ile Phe Gly Leu Ala Lys Glu Ala Ile Ser His Val Ala Leu
50 55 60

Met Ile Ala Ser Leu Ile Val Ser Arg Asp His Pro Thr Gly Asn Ser
65 70 75 80

Leu Pro Arg Leu Glu Glu Trp Met Asn Tyr Ser Phe Pro Leu Gln Leu
85 90 95

Asn Ile Glu Glu Leu Lys Arg Leu Lys Ser Ile Asp Ala Ile Ala Glu
100 105 110

Arg Val Ala Asp Asp Leu Ile Glu Val Phe Gln Asn Lys Phe Ala Ser
115 120 125

Met Val Gln Glu Ile Thr Glu Ala Ala Gly Glu Lys Val Asp Ala Asn
130 135 140

Gly Val Cys Lys Asp Val Ile Arg Ser Val Met Ile Met His Ile Asp
145 150 155 160

Glu Gln Trp Lys Ile His Leu Val Asp Met Asp Leu Leu Arg Ser Glu
165 170 175

Val Gly Leu Arg Thr Val Gly Gln Lys Asp Pro Leu Ile Glu Phe Lys
180 185 190

His Glu Ser Phe Leu Leu Phe Glu Ser Leu Ile Arg Asp Ile Arg Ile
195 200 205

Ala Ile Val Lys His Leu Phe Arg Leu Glu Leu Thr Met Thr Arg Glu
210 215 220

Gln Arg Pro Gln Asn Val Val Pro Val Val Ala Thr Ser Phe Gln Asn
225 230 235 240

Asn Glu Asn Phe Gly Pro Leu Glu Leu Thr Val Ile Ser Asp Ser Asp
245 250 255

Asp Glu

<210> 30

<211> 697

<212> DNA

<213> Chlamydia psittaci

<400> 30

gggttttgatt atctcagaga taattctatt gcaacttctg tggatgagca ggtgggacgt 60
gggttttatt ttgtattat cgatgaagtc gactcgattt taattgatga agccagaact 120
cctttaatta tttctgggtcc tggggaaaaa cataatcctg tgtatttcga actcaaagat 180
aaagtggctg acctcgttca gttacaaagg gagttatgta accagtttagc tcttgaagct 240

agacggggac tagaattggt cttggatatg gatattcttc ctaaggataa aaaagttatc 300
 gaagctatct ccgaattttg ccgtagctta tggtagtta gtaagggat gcctttaaat 360
 cgtgttttgc gtagagtgcg cgaacaccca gatttgcgag ccatgataga taaatgggat 420
 acttattatc atgctgagca aaataaagaa gagagtatag agaagctatc tcagctgtat 480
 atcattgttg atgaacataa taacgatttt gaattgacag atcgtggcat gcaacaatgg 540
 gtggataagg ctggagggtt tgctgaagat tttgtcatga tggacatggg gcatgaatat 600
 gctcttatag atggtgacga taccttatca ccgacagaga aaatcaatag aaaaatagct 660
 atttccgaag aagatacgag gagaaaagct cgagctc 697

<210> 31

<211> 232

<212> PRT

<213> Chlamydia psittaci

<400> 31

Gly Phe Asp Tyr Leu Arg Asp Asn Ser Ile Ala Thr Ser Val Asp Glu
 1 5 10 15

Gln Val Gly Arg Gly Phe Tyr Phe Ala Ile Ile Asp Glu Val Asp Ser
 20 25 30

Ile Leu Ile Asp Glu Ala Arg Thr Pro Leu Ile Ile Ser Gly Pro Gly
 35 40 45

Glu Lys His Asn Pro Val Tyr Phe Glu Leu Lys Asp Lys Val Ala Asp
 50 55 60

Leu Val Gln Leu Gln Arg Glu Leu Cys Asn Gln Leu Ala Leu Glu Ala
 65 70 75 80

Arg Arg Gly Leu Glu Leu Phe Leu Asp Met Asp Ile Leu Pro Lys Asp
 85 90 95

Lys Lys Val Ile Glu Ala Ile Ser Glu Phe Cys Arg Ser Leu Trp Leu
 100 105 110

Val Ser Lys Gly Met Pro Leu Asn Arg Val Leu Arg Arg Val Arg Glu
 115 120 125

His Pro Asp Leu Arg Ala Met Ile Asp Lys Trp Asp Thr Tyr Tyr His
 130 135 140

Ala Glu Gln Asn Lys Glu Glu Ser Ile Glu Lys Leu Ser Gln Leu Tyr
 145 150 155 160

Ile Ile Val Asp Glu His Asn Asn Asp Phe Glu Leu Thr Asp Arg Gly
 165 170 175

Met Gln Gln Trp Val Asp Lys Ala Gly Gly Ser Ala Glu Asp Phe Val
 180 185 190

Met Met Asp Met Gly His Glu Tyr Ala Leu Ile Asp Gly Asp Asp Thr
 195 200 205

25103618.1

Leu Ser Pro Thr Glu Lys Ile Asn Arg Lys Ile Ala Ile Ser Glu Glu
 210 215 220

Asp Thr Arg Arg Lys Ala Arg Ala
 225 230

<210> 32
 <211> 2910
 <212> DNA
 <213> Chlamydia psittaci

<400> 32
 atggttagatt ttcttaaacy tttcttttga tcttctcaag agcgacacctt aaaaaaattt 60
 caaaaacttg tggataaggt caacctctat gatgagatgc tagctccttt gtctgatgag 120
 gagttacgta ataaaacagc agagttaaaa aagcgttatc aggacggcga atccttagat 180
 gatatgcttc ccgaggctta tgccgtagtg aaaaatgtat gcaggcgctt aacaggaact 240
 cctgtagaag tgcgggtta tcatcaaat tgggacatgg ttcctatga tgtgcagggt 300
 ctccgtgcta tagctatgca taagggtctt ataaccgaga tgcagacagg agaggggaaa 360
 actctcaccg ctgttatgcc tctatattta aatgcattga caggcaagcc tgtgcattta 420
 gtcacagtga atgattatct cgctcaaagg gattgtgagt gggtcggctc tatattgctg 480
 tgggttaggtt taactaccgg agtattgata tcaggatcgc ctttagaaaa aagaaaagac 540
 atttatcggt gtgacgttgt ctacgggtaca gcatcagagt tcgggtttga ttatctcaga 600
 gataattcta ttgcaacttc tgtggatgag cagggtgggac gtgggtttta ttttgctatt 660
 atcgatgaag tcgactcgat ttttaattgat gaagccagaa ctcccttaat tatttctggt 720
 cctggggaaa aacataatcc tgtgtatttc gaactcaaag ataaagtggc tgacctcggt 780
 cagttacaaa gggagttagt taaccagtta gctcttgaag ctagacgggg actagaattg 840
 ttcttgata tggatattct tcttaaggat aaaaaagtta tcgaagctat ctccgaattt 900
 tgccgtagct tatggttagt tagtaaggga atgcctttaa atcggtgttt gcgtagagt 960
 cgcaacacc cagatttgcg agccatgata gataaatggg atacttatta tcatgctgag 1020
 caaaaataag aagagagtat agagaagcta tctcagctgt atatcattgt tgatgaacat 1080
 aataacgatt ttgaattgac agatcggtggc atgcaacaat ggggtggataa ggctggaggt 1140
 tctgctgaag attttgtcat gatggacatg gggcatgaat atgctcttat agatggtgac 1200
 gataccttat caccgacaga gaaaatcaat agaaaaatag ctatttccga agaagatacg 1260
 aggagaaaag ctcgagctca tggcttgccg caactattaa gagcgcatct tcttatggaa 1320
 cgcgatgtgg atttatattgt tcgtaattgat caaattgtca tcattgacga acatacgggc 1380
 cgcccgcaac caggtcgctg tttttccgaa ggactgcatc aagccataga agcaaaaaga 1440
 catgtcacta tccgtaagga atcacaaacg tttgctacag ttaccttaca gaatttcttc 1500
 cgtctgtatg aaaaactcgc aggtatgacg ggaacagcaa ttacggaatc taaagagttt 1560
 aaagagattt ataactctta tgtattgcag gtgcccacgt ttaaagaatg tttgcgtgta 1620
 gatcacatg acgaatttta tatgacagag cgtgaaaagt accacgcgat tgtaaaggaa 1680
 attgcccgtg tacatgccgt agggaaacccg attctcatag gaacggagtc tgtagaggtt 1740
 tctgagaaac tttctcgat tttgagacaa aatcgcatag aacatacagt gttaaatgct 1800
 aaaaatcatg ctcaagaagc agagatcatt gcagcagcag gaaagctggg agctgtgact 1860
 gtagctacca atatggctgg ccgtggtaca gatattaagc tggatgaaga agctgtagtt 1920
 gttggagggtc tccatgttat tggtagaggt cggcaccaat cagcccgat agataggcag 1980
 ttgcgcgggc gttgcgcacg tttaggagat cctgggttcg cgaaattttt cctatctttt 2040
 gaagatcgcc tgatgcgctt atttgcacgc ccaagttaa atgccttgat tcgtcatttc 2100
 cgtcctcctg aaggagaggc tatgtcggat cctatgttca ataagctcat tgaaacagca 2160
 cagaaacggg tggaaagcaag aaactatact attcgaaagc atactcttga gtatgacgat 2220
 gttatgaata ggcaaggca gacgatctat gcttttcgta atgacgttat ccgctctgaa 2280
 gatattcttg gtttagctaa ggaagcaata tctcatgttg cattaatgat cgcttcggtg 2340
 atagttagcc gtgatcatcc tacagggaat tctcttccta ggctggaaga atggatgaac 2400

tattctttcc cactgcaatt gaatttgaa gaattgaaaa gattgaagtc tatagatgcc 2460
 attgccgaac ggggttgctga tgatctcata gaagttttcc agaataagtt tgcttctatg 2520
 gtgcaggaaa ttaccgaagc agccggagaa aaagtcgatg ctaatggtgt ctgtaaagat 2580
 gttattcgct cggtcgatgat tatgcatatc gatgagcagt ggaaaattca tctttagatg 2640
 atggatttat tacgtagtga agtaggttta cgtactgtcg gtcagaaaga ccctcttatc 2700
 gaatttaaac atgagtcgtt cttactattc gaaagtotta ttgcgcatat tcgtattgct 2760
 attgtaaagc atttgttccg tttagagttg acgatgacta gagaacagcg gcctcaaaat 2820
 gtcgtgcttg ttgttgccac atctttccaa aataatgaaa atttcgggtcc tttggaactc 2880
 acagttatca gtgattctga cgatgaataa 2910

<210> 33

<211> 969

<212> PRT

<213> Chlamydia psittaci

<400> 33

Met Leu Asp Phe Leu Lys Arg Phe Phe Gly Ser Ser Gln Glu Arg Thr
 1 5 10 15

Leu Lys Lys Phe Gln Lys Leu Val Asp Lys Val Asn Leu Tyr Asp Glu
 20 25 30

Met Leu Ala Pro Leu Ser Asp Glu Glu Leu Arg Asn Lys Thr Ala Glu
 35 40 45

Leu Lys Lys Arg Tyr Gln Asp Gly Glu Ser Leu Asp Asp Met Leu Pro
 50 55 60

Glu Ala Tyr Ala Val Val Lys Asn Val Cys Arg Arg Leu Thr Gly Thr
 65 70 75 80

Pro Val Glu Val Ser Gly Tyr His Gln Asn Trp Asp Met Val Pro Tyr
 85 90 95

Asp Val Gln Val Leu Gly Ala Ile Ala Met His Lys Gly Phe Ile Thr
 100 105 110

Glu Met Gln Thr Gly Glu Gly Lys Thr Leu Thr Ala Val Met Pro Leu
 115 120 125

Tyr Leu Asn Ala Leu Thr Gly Lys Pro Val His Leu Val Thr Val Asn
 130 135 140

Asp Tyr Leu Ala Gln Arg Asp Cys Glu Trp Val Gly Ser Ile Leu Arg
 145 150 155 160

Trp Leu Gly Leu Thr Thr Gly Val Leu Ile Ser Gly Ser Pro Leu Glu
 165 170 175

Lys Arg Lys Asp Ile Tyr Arg Cys Asp Val Val Tyr Gly Thr Ala Ser
 180 185 190

Glu Phe Gly Phe Asp Tyr Leu Arg Asp Asn Ser Ile Ala Thr Ser Val

195	200	205
Asp Glu Gln Val Gly Arg Gly Phe Tyr Phe Ala Ile Ile Asp Glu Val 210 215 220		
Asp Ser Ile Leu Ile Asp Glu Ala Arg Thr Pro Leu Ile Ile Ser Gly 225 230 235 240		
Pro Gly Glu Lys His Asn Pro Val Tyr Phe Glu Leu Lys Asp Lys Val 245 250 255		
Ala Asp Leu Val Gln Leu Gln Arg Glu Leu Cys Asn Gln Leu Ala Leu 260 265 270		
Glu Ala Arg Arg Gly Leu Glu Leu Phe Leu Asp Met Asp Ile Leu Pro 275 280 285		
Lys Asp Lys Lys Val Ile Glu Ala Ile Ser Glu Phe Cys Arg Ser Leu 290 295 300		
Trp Leu Val Ser Lys Gly Met Pro Leu Asn Arg Val Leu Arg Arg Val 305 310 315 320		
Arg Glu His Pro Asp Leu Arg Ala Met Ile Asp Lys Trp Asp Thr Tyr 325 330 335		
Tyr His Ala Glu Gln Asn Lys Glu Glu Ser Ile Glu Lys Leu Ser Gln 340 345 350		
Leu Tyr Ile Ile Val Asp Glu His Asn Asn Asp Phe Glu Leu Thr Asp 355 360 365		
Arg Gly Met Gln Gln Trp Val Asp Lys Ala Gly Gly Ser Ala Glu Asp 370 375 380		
Phe Val Met Met Asp Met Gly His Glu Tyr Ala Leu Ile Asp Gly Asp 385 390 395 400		
Asp Thr Leu Ser Pro Thr Glu Lys Ile Asn Arg Lys Ile Ala Ile Ser 405 410 415		
Glu Glu Asp Thr Arg Arg Lys Ala Arg Ala His Gly Leu Arg Gln Leu 420 425 430		
Leu Arg Ala His Leu Leu Met Glu Arg Asp Val Asp Tyr Ile Val Arg 435 440 445		
Asn Asp Gln Ile Val Ile Ile Asp Glu His Thr Gly Arg Pro Gln Pro 450 455 460		
Gly Arg Arg Phe Ser Glu Gly Leu His Gln Ala Ile Glu Ala Lys Glu 465 470 475 480		
His Val Thr Ile Arg Lys Glu Ser Gln Thr Phe Ala Thr Val Thr Leu		

485	490	495
Gln Asn Phe Phe Arg Leu Tyr Glu Lys Leu Ala Gly Met Thr Gly Thr		
500	505	510
Ala Ile Thr Glu Ser Lys Glu Phe Lys Glu Ile Tyr Asn Leu Tyr Val		
515	520	525
Leu Gln Val Pro Thr Phe Lys Glu Cys Leu Arg Val Asp His Asn Asp		
530	535	540
Glu Phe Tyr Met Thr Glu Arg Glu Lys Tyr His Ala Ile Val Lys Glu		
545	550	555
Ile Ala Arg Ile His Ala Val Gly Asn Pro Ile Leu Ile Gly Thr Glu		
565	570	575
Ser Val Glu Val Ser Glu Lys Leu Ser Arg Ile Leu Arg Gln Asn Arg		
580	585	590
Ile Glu His Thr Val Leu Asn Ala Lys Asn His Ala Gln Glu Ala Glu		
595	600	605
Ile Ile Ala Ala Ala Gly Lys Leu Gly Ala Val Thr Val Ala Thr Asn		
610	615	620
Met Ala Gly Arg Gly Thr Asp Ile Lys Leu Asp Glu Glu Ala Val Val		
625	630	635
Val Gly Gly Leu His Val Ile Gly Thr Ser Arg His Gln Ser Arg Arg		
645	650	655
Ile Asp Arg Gln Leu Arg Gly Arg Cys Ala Arg Leu Gly Asp Pro Gly		
660	665	670
Ser Ala Lys Phe Phe Leu Ser Phe Glu Asp Arg Leu Met Arg Leu Phe		
675	680	685
Ala Ser Pro Lys Leu Asn Ala Leu Ile Arg His Phe Arg Pro Pro Glu		
690	695	700
Gly Glu Ala Met Ser Asp Pro Met Phe Asn Lys Leu Ile Glu Thr Ala		
705	710	715
Gln Lys Arg Val Glu Ala Arg Asn Tyr Thr Ile Arg Lys His Thr Leu		
725	730	735
Glu Tyr Asp Asp Val Met Asn Arg Gln Arg Gln Thr Ile Tyr Ala Phe		
740	745	750
Arg Asn Asp Val Ile Arg Ser Glu Asp Ile Phe Gly Leu Ala Lys Glu		
755	760	765
Ala Ile Ser His Val Ala Leu Met Ile Ala Ser Leu Ile Val Ser Arg		

770

775

780

Asp His Pro Thr Gly Asn Ser Leu Pro Arg Leu Glu Glu Trp Met Asn
785 790 795 800

Tyr Ser Phe Pro Leu Gln Leu Asn Ile Glu Glu Leu Lys Arg Leu Lys
805 810 815

Ser Ile Asp Ala Ile Ala Glu Arg Val Ala Asp Asp Leu Ile Glu Val
820 825 830

Phe Gln Asn Lys Phe Ala Ser Met Val Gln Glu Ile Thr Glu Ala Ala
835 840 845

Gly Glu Lys Val Asp Ala Asn Gly Val Cys Lys Asp Val Ile Arg Ser
850 855 860

Val Met Ile Met His Ile Asp Glu Gln Trp Lys Ile His Leu Val Asp
865 870 875 880

Met Asp Leu Leu Arg Ser Glu Val Gly Leu Arg Thr Val Gly Gln Lys
885 890 895

Asp Pro Leu Ile Glu Phe Lys His Glu Ser Phe Leu Leu Phe Glu Ser
900 905 910

Leu Ile Arg Asp Ile Arg Ile Ala Ile Val Lys His Leu Phe Arg Leu
915 920 925

Glu Leu Thr Met Thr Arg Glu Gln Arg Pro Gln Asn Val Val Pro Val
930 935 940

Val Ala Thr Ser Phe Gln Asn Asn Glu Asn Phe Gly Pro Leu Glu Leu
945 950 955 960

Thr Val Ile Ser Asp Ser Asp Asp Glu
965

<210> 34

<211> 577

<212> DNA

<213> Chlamydia psittaci

<400> 34

gttgatgctg cagttattcc agggaaacttc gccattgcag ggggaatctg tccgtataaa 60
aacagtctat acctagaaga tgtccgtact tcccaatata ccaatgtcgt tgtcatacgt 120
gctgaagata tggaagactc gagaatgcat aaactaaaac agctattgca aagcagttct 180
gtgcaggatt tctttaatac gaaatataag gggatctttt tatcgagta acacatctgg 240
atggcctagg gaagagttga gccaccccggt tctccgtagg ttttaaggcat attgggaaac 300
gattttcttg aattttttga aaaactttga ctgtttttct tttgattatt cgaagcagat 360
gtatgtcgag tatggcggtt ttagggccca gaggtcctt cagttctcct tttacatggt 420
ctctataccc aaccaccta aaaatgcact tgctaggttc cattcctata gttggcatat 480
acattggagc gaagcggata gccgccgttg ctcaatatca tagaatgtgt agagcgaata 540

25103618.1

caggagtgtc tcaggtgatt attcaggatt caggatt

577

<210> 35

<211> 76

<212> PRT

<213> Chlamydia psittaci

<400> 35

Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Gly Gly Ile
1 5 10 15

Cys Pro Tyr Lys Asn Ser Leu Tyr Leu Glu Asp Val Arg Thr Ser Gln
20 25 30

Tyr Thr Asn Val Val Val Ile Arg Ala Glu Asp Met Glu Asp Ser Arg
35 40 45

Met His Lys Leu Lys Gln Leu Leu Gln Ser Ser Ser Val Gln Asp Phe
50 55 60

Phe Asn Thr Lys Tyr Lys Gly Ile Phe Leu Ser Gln
65 70 75

<210> 36

<211> 804

<212> DNA

<213> Chlamydia psittaci

<400> 36

atgaaaaaaa tcacaatact ctcggttaact gcttttagcca tctctttaac aggttggtgc 60
aagaattcag aaggagtctt gcggtattgcg gcgagtccea cgccacatgc agagcttctt 120
tatagtttag aaaaggaggc tcaatccctt ggattgcaat tgaaaatact tcccatagat 180
gattaccgtg tacctaaccg tttgctttta gataagcaaa tagaggcaaa ttattttccaa 240
catgaagatt tcttaaaaga tgagtgtgct cggtaccaat gcgaaggaaa acttgcgatt 300
ttggctaagg tacatttaga acctatgggt ttatattcta ataaaacca gtctctcgaa 360
gagcttaaag tcaaggaaca gctacgtata gcggttccta tagatagaac aaacgaacaa 420
cgtgcgctag acttattgcy agactgcaat ttgattagtt acaaagaagc ttctcatcta 480
gatatcaccg caaaagatgt ctttggttgt ggagggaana aggtaacgat tatagagatg 540
gcagcacctt tattagtatc ttctttacca gacgttgatg ctgcagttat tccagggaac 600
ttcgccattg cagggggaat ctgtccgtat aaaaacagtc tatacctaga agatgtccgt 660
acttcccaat acaccaatgt cgttggtcata cgtgctgaag atatggaaga ctcgagaatg 720
cataaactaa aacagctatt gcaaagcagt tctgtgcagg atttctttaa tacgaaatat 780
aaggggatct ttttatcgca gtaa 804

<210> 37

<211> 267

<212> PRT

<213> Chlamydia psittaci

<400> 37

Met Lys Lys Ile Thr Ile Leu Ser Leu Leu Ala Leu Ala Ile Ser Leu

1	5	10	15
Thr Gly Cys Cys Lys Asn Ser Glu Gly Val Leu Arg Ile Ala Ala Ser	20	25	30
Pro Thr Pro His Ala Glu Leu Leu Tyr Ser Leu Glu Lys Glu Ala Gln	35	40	45
Ser Leu Gly Leu Gln Leu Lys Ile Leu Pro Ile Asp Asp Tyr Arg Val	50	55	60
Pro Asn Arg Leu Leu Leu Asp Lys Gln Ile Glu Ala Asn Tyr Phe Gln	65	70	75
His Glu Asp Phe Leu Lys Asp Glu Cys Ala Arg Tyr Gln Cys Glu Gly	85	90	95
Lys Leu Ala Ile Leu Ala Lys Val His Leu Glu Pro Met Gly Leu Tyr	100	105	110
Ser Asn Lys Thr Gln Ser Leu Glu Glu Leu Lys Val Lys Glu Gln Leu	115	120	125
Arg Ile Ala Val Pro Ile Asp Arg Thr Asn Glu Gln Arg Ala Leu Asp	130	135	140
Leu Leu Arg Asp Cys Asn Leu Ile Ser Tyr Lys Glu Ala Ser His Leu	145	150	155
Asp Ile Thr Ala Lys Asp Val Phe Gly Cys Gly Gly Lys Lys Val Thr	165	170	175
Ile Ile Glu Met Ala Ala Pro Leu Leu Val Ser Ser Leu Pro Asp Val	180	185	190
Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Gly Gly Ile Cys	195	200	205
Pro Tyr Lys Asn Ser Leu Tyr Leu Glu Asp Val Arg Thr Ser Gln Tyr	210	215	220
Thr Asn Val Val Val Ile Arg Ala Glu Asp Met Glu Asp Ser Arg Met	225	230	235
His Lys Leu Lys Gln Leu Leu Gln Ser Ser Ser Val Gln Asp Phe Phe	245	250	255
Asn Thr Lys Tyr Lys Gly Ile Phe Leu Ser Gln	260	265	

<210> 38
 <211> 402
 <212> DNA

<213> Chlamydia psittaci

<400> 38

```
catgtattttt acgcaaaaaa taaacggtat aactcctgct tacaagccgc gctataccac 60
aataatatcc cgacaaccgt gtacacaaac cttattgata tcgtgaagaa aaattcttca 120
ctaatacaga agtacttttc catcaaaca cgaatgcttaa atctaaaaga tttccatttt 180
tatgatgttt atgctccctt aagtcagtc aaagagaaaa aatatacggt ccaagaagct 240
gtggatctta tctatactag cttttctcct ctaggaacgg aatacattga taccttaaaa 300
caggggttaa caactcaagg ctgggtagat aaatacgaaa atcttaataa acgctccgga 360
gcctattctt cgggatgtta cgaatagccac ccttatgtcc tc 402
```

<210> 39

<211> 134

<212> PRT

<213> Chlamydia psittaci

<400> 39

```
His Val Phe Tyr Ala Lys Asn Lys Arg Tyr Asn Ser Cys Leu Gln Ala
  1             5             10             15

Ala Leu Tyr His Asn Asn Ile Pro Thr Thr Val Tyr Thr Asn Leu Ile
      20             25             30

Asp Ile Val Lys Lys Asn Ser Ser Leu Ile Thr Lys Tyr Phe Ser Ile
      35             40             45

Lys Gln Arg Cys Leu Asn Leu Lys Asp Phe His Phe Tyr Asp Val Tyr
      50             55             60

Ala Pro Leu Ser Gln Ser Lys Glu Lys Lys Tyr Thr Phe Gln Glu Ala
      65             70             75             80

Val Asp Leu Ile Tyr Thr Ser Leu Ser Pro Leu Gly Thr Glu Tyr Ile
      85             90             95

Asp Thr Leu Lys Gln Gly Leu Thr Thr Gln Gly Trp Val Asp Lys Tyr
      100            105            110

Glu Asn Leu Asn Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr Asp
      115            120            125

Ser His Pro Tyr Val Leu
      130
```

<210> 40

<211> 1827

<212> DNA

<213> Chlamydia psittaci

<400> 40

```
atgagcgtag aattcaacaa gcaacaagtc cgtccaagaa gtgaaatttc ccctcaagat 60
tgttgggata tcacccctt atatctaaat agaaaagcat ggaaagcaga tcttgattct 120
```



```

ttcggattaa aaacagacgg ctcacctacg tggcccgctc ttcaagcaac gcaataccaa 180
ctggacaact cagaatctct actatcctta ttaactactc tcttctctat tgagagaaaa 240
ttaaacaacac tctacgttta cgctcatctg actcatgatac aggatattac aaatcaagaa 300
ggcatcgcag atcttaaatc tatcacgcac ctacatacct tatttgccga agaaacctct 360
tgggtacaac ccgctttaac cagcctatcg gaatctctca ttgctcagca cctatcagct 420
ccctgttttag ctcttatag attctattta gagaaaatct ttagactatc tatacacaca 480
ggcactcctg gagaagaaaa aattctcgtc tccgccttta ctctcttga agtagccagt 540
aaggcatttt cttctttaag tgactctgaa attccctttg ggcaagctac agactcagaa 600
ggaaactctc acccgctttc tcatgcaact gcttcattgt atatgcaatc cacagatcgg 660
gaattacgaa aaacatccta cctagcacaa tgtgaaagat atcatagtta ccgacatacc 720
tttgctaact tactcaatgg gaaaatccaa gcccatgtat tttagcmeta aaataaacgg 780
tataactcct gcttacaagc cgcgctatac cacaataata tcccagacaac cgtgtacaca 840
aacctttattg atatcgtgaa gaaaaattct tcaactaatca cgaagtactt ttccatcaaa 900
caacgatgct taaatctaaa agatttccat ttttatgatg tttatgctcc cctaagtcag 960
tccaaagaga aaaaatatac gttccaagaa gctgtggatc ttatctatac tagcctttct 1020
cctctaggaa cggaatacat tgatacctta aaacaggggt taacaactca aggctgggta 1080
gataaatacg aaaatcttaa taaacgctcc ggagcctatt cttcgggatg ttacgatagc 1140
cacccttatg tcctcctaaa ctatacaggc accctgtatg atgtatccgt cattgcccac 1200
gaaggcggac acagtatgca ctcgatattt agtaggaagc atcaaccttt ccatgacgct 1260
caatatccta ttttccttgc tgaaattgct tctaccttaa atgaaatgct tcttatggat 1320
tccatgctga aggagagcga ctcaaaagaa gagaaaatca ccattctgac acgatgtttg 1380
gataccatct tctctacact attccgctcag gtattattcg cctcttttga atacgatatt 1440
catcacgcag cagaacatgg gggtcctcta actgaagaat acctatcctc aacttacaag 1500
aatttcaaaa atgagtttta cggagaaatt atcacatttg atgtcctgtc gaacatagaa 1560
tgggcaagaa ttcctcattt ctattacaat ttctacgtat accaatatgc aacgggcatt 1620
atagccgccc tgtgcttttt agaaaaaatt ctttaacaacg aagataacgc tcttaactcc 1680
tatctcaact ttttaaaaag tgggtggatca gatttcccct tagaaatctt aaaaaaatca 1740
ggattagata tgggcacagt tgagccaatc caaaaagctt tttgctttat cgagaaaaaa 1800
atccaggagc tatcatcttt aatttga 1827

```

<210> 41

<211> 608

<212> PRT

<213> Chlamydia psittaci

<400> 41

```

Met Ser Val Glu Phe Asn Lys Gln Gln Val Arg Pro Arg Ser Glu Ile
  1             5             10            15

```

```

Ser Pro Gln Asp Cys Trp Asp Ile Thr Pro Leu Tyr Leu Asn Arg Lys
      20             25            30

```

```

Ala Trp Lys Ala Asp Leu Asp Ser Phe Gly Leu Lys Thr Asp Gly Ser
    35             40            45

```

```

Pro Thr Trp Pro Ala Leu Gln Ala Thr Gln Tyr Gln Leu Asp Asn Ser
    50             55            60

```

```

Glu Ser Leu Leu Ser Leu Leu Thr Thr Leu Phe Ser Ile Glu Arg Lys
    65             70            75            80

```

```

Leu Asn Lys Leu Tyr Val Tyr Ala His Leu Thr His Asp Gln Asp Ile
      85             90            95

```

Thr	Asn	Gln	Glu	Gly	Ile	Ala	Asp	Leu	Lys	Ser	Ile	Thr	His	Leu	His	100	105	110
Thr	Leu	Phe	Ala	Glu	Glu	Thr	Ser	Trp	Val	Gln	Pro	Ala	Leu	Thr	Ser	115	120	125
Leu	Ser	Glu	Ser	Leu	Ile	Ala	Gln	His	Leu	Ser	Ala	Pro	Cys	Leu	Ala	130	135	140
Pro	Tyr	Arg	Phe	Tyr	Leu	Glu	Lys	Ile	Phe	Arg	Leu	Ser	Ile	His	Thr	145	150	155
Gly	Thr	Pro	Gly	Glu	Glu	Lys	Ile	Leu	Ala	Ser	Ala	Phe	Thr	Pro	Leu	165	170	175
Glu	Val	Ala	Ser	Lys	Ala	Phe	Ser	Ser	Leu	Ser	Asp	Ser	Glu	Ile	Pro	180	185	190
Phe	Gly	Gln	Ala	Thr	Asp	Ser	Glu	Gly	Asn	Ser	His	Pro	Leu	Ser	His	195	200	205
Ala	Leu	Ala	Ser	Leu	Tyr	Met	Gln	Ser	Thr	Asp	Arg	Glu	Leu	Arg	Lys	210	215	220
Thr	Ser	Tyr	Leu	Ala	Gln	Cys	Glu	Arg	Tyr	His	Ser	Tyr	Arg	His	Thr	225	230	235
Phe	Ala	Asn	Leu	Leu	Asn	Gly	Lys	Ile	Gln	Ala	His	Val	Phe	Tyr	Ala	245	250	255
Lys	Asn	Lys	Arg	Tyr	Asn	Ser	Cys	Leu	Gln	Ala	Ala	Leu	Tyr	His	Asn	260	265	270
Asn	Ile	Pro	Thr	Thr	Val	Tyr	Thr	Asn	Leu	Ile	Asp	Ile	Val	Lys	Lys	275	280	285
Asn	Ser	Ser	Leu	Ile	Thr	Lys	Tyr	Phe	Ser	Ile	Lys	Gln	Arg	Cys	Leu	290	295	300
Asn	Leu	Lys	Asp	Phe	His	Phe	Tyr	Asp	Val	Tyr	Ala	Pro	Leu	Ser	Gln	305	310	315
Ser	Lys	Glu	Lys	Lys	Tyr	Thr	Phe	Gln	Glu	Ala	Val	Asp	Leu	Ile	Tyr	325	330	335
Thr	Ser	Leu	Ser	Pro	Leu	Gly	Thr	Glu	Tyr	Ile	Asp	Thr	Leu	Lys	Gln	340	345	350
Gly	Leu	Thr	Thr	Gln	Gly	Trp	Val	Asp	Lys	Tyr	Glu	Asn	Leu	Asn	Lys	355	360	365
Arg	Ser	Gly	Ala	Tyr	Ser	Ser	Gly	Cys	Tyr	Asp	Ser	His	Pro	Tyr	Val	370	375	380

Leu Leu Asn Tyr Thr Gly Thr Leu Tyr Asp Val Ser Val Ile Ala His
 385 390 395 400
 Glu Gly Gly His Ser Met His Ser Tyr Phe Ser Arg Lys His Gln Pro
 405 410 415
 Phe His Asp Ala Gln Tyr Pro Ile Phe Leu Ala Glu Ile Ala Ser Thr
 420 425 430
 Leu Asn Glu Met Leu Leu Met Asp Ser Met Leu Lys Glu Ser Asp Ser
 435 440 445
 Lys Glu Glu Lys Ile Thr Ile Leu Thr Arg Cys Leu Asp Thr Ile Phe
 450 455 460
 Ser Thr Leu Phe Arg Gln Val Leu Phe Ala Ser Phe Glu Tyr Asp Ile
 465 470 475 480
 His His Ala Ala Glu His Gly Val Pro Leu Thr Glu Glu Tyr Leu Ser
 485 490 495
 Ser Thr Tyr Lys Asn Leu Gln Asn Glu Phe Tyr Gly Glu Ile Ile Thr
 500 505 510
 Phe Asp Val Leu Ser Asn Ile Glu Trp Ala Arg Ile Pro His Phe Tyr
 515 520 525
 Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr Gly Ile Ile Ala Ala Leu
 530 535 540
 Cys Phe Leu Glu Lys Ile Leu Asn Asn Glu Asp Asn Ala Leu Asn Ser
 545 550 555 560
 Tyr Leu Asn Phe Leu Lys Ser Gly Gly Ser Asp Phe Pro Leu Glu Ile
 565 570 575
 Leu Lys Lys Ser Gly Leu Asp Met Gly Thr Val Glu Pro Ile Gln Lys
 580 585 590
 Ala Phe Cys Phe Ile Glu Lys Lys Ile Gln Glu Leu Ser Ser Leu Ile
 595 600 605

<210> 42

<211> 1517

<212> DNA

<213> Chlamydia psittaci

<400> 42

gcgtagatt cggaagagct gaaagagcaa ataaacaatc taaaagagcg tttatgggat 60

gcacaatcca ctctacaaca agatcaaaaat aaactatcgc aagaacattt tgaagctgtc 120
 agtgtgatca ttgatttaaat caatggtgat ctgaatgata tagctgagca tacgcaacaa 180
 aacttacaaa ccaaaaaaaga agaagaacac gagtccgttg cccgtaagat ggtcaattgg 240
 gtgtcttctg gagaagaagt gttaaataga gcccttctct acttctcaga taggaatgga 300
 gaacgggaaa atttagcaga ctttttaaaa gtacagtatg ctgttcaaag agcaacgcaa 360
 agagcagaac tttttgctag tatcgtagga actacggtaa gtagtataaa gacgataatg 420
 accacacaat taggttaaca tggacgaatt gacgacagat ttcgataccc tcatgtcgca 480
 attgaacgac gtacacttga ctaccgttgt cggtcgtata actgaagtcg tcggtatggt 540
 aattaaagct gtcgttccca atgtacgcgt tggggaggta tgcttagtta aacgttatgg 600
 tatggagccg ctctgtgaccg aagtcgtcgg cttcacacaa aatttcgctt ttttatcgcc 660
 actaggagaa cttactggag tcagcccttc ttcagagggtt attcccacag gtctgccttt 720
 gtatatccgt gcaggtaacg gtcttttagg tcgtgtattg aatggctcgg gagaacctat 780
 cgactccgag atcaaaggac ctttggttga tgttaacgaa acctaccctg tgtttcgcgc 840
 tccaccagat ccattgcata gagaaaaatt aagaacaatt ttatccaccg gcgtgcggtg 900
 tatcgacggg atgctcacag tcgccagagg ccagcgtata ggcatttttg ctggagctgg 960
 ggtgggtaaa tcgtctctct tgggaatgat cgctagaaac gcggaagaag ccgatgtcaa 1020
 tgtgattgct ctcatcggag agcggggccg agagggttcgt gaatttatcg agggcgatct 1080
 cggaagaaga ggaatgaaac gtccggtgat cgtcgtctct acttcagatc aatcctcaca 1140
 gttgcgatta aatgctgctt acgtaggcac cgctatagca gagtattttc gtgatcaggg 1200
 caaaaccgta gttttgatga tggattctgt cacccgattt gcccgagccc taagagaagt 1260
 cggctctagct gccggagaac cgccagctcg aggaggatac acaccttctg tattctcaac 1320
 tttgcctagg ttattagaac gtcccgagc ttcggataaa ggaacaatca cagcctttta 1380
 cacagtactt gttgccgggg atgatatgaa tgaaccggtc gctgatgaag ttaaatacga 1440
 tcttgatggt cacgttgtct tgtctaacgc tttagctcag gcataccatt atcctgctat 1500
 tgatgtctta gcatcta 1517

<210> 43

<211> 145

<212> PRT

<213> Chlamydia psittaci

<400> 43

Ala Leu Asp Ser Glu Glu Leu Lys Glu Gln Ile Asn Asn Leu Lys Glu
 1 5 10 15

Arg Leu Trp Asp Ala Gln Ser Thr Leu Gln Gln Asp Gln Asn Lys Leu
 20 25 30

Ser Gln Glu His Phe Glu Ala Val Ser Val Ile Ile Asp Leu Ile Asn
 35 40 45

Gly Asp Leu Asn Asp Ile Ala Glu His Thr Gln Gln Asn Leu Gln Thr
 50 55 60

Lys Lys Glu Glu Glu His Glu Ser Val Ala Arg Lys Met Val Asn Trp
 65 70 75 80

Val Ser Ser Gly Glu Glu Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser
 85 90 95

Asp Arg Asn Gly Glu Arg Glu Asn Leu Ala Asp Phe Leu Lys Val Gln
 100 105 110

Tyr Ala Val Gln Arg Ala Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile
 115 120 125

Val Gly Thr Thr Val Ser Ser Ile Lys Thr Ile Met Thr Thr Gln Leu
 130 135 140

Gly
 145

<210> 44
 <211> 669
 <212> DNA
 <213> Chlamydia psittaci

<400> 44
 atggtagatc ctttgaagct tttcccaaag ctagactccg agaaagaaac agctttctata 60
 cagaagcctt taggaactcc tttagccagt gagttacata aggaagttcc tgcattttct 120
 ttagggacgg cagcagactc cttgaataaa aatatagagg atgtcaagcc taaccctatg 180
 gcgatgatgc aagacagaaa ctctaacatt atcgatcctg aactggaaga ggcggttagat 240
 tcggaagagc tgaaagagca aataaacaat ctaaaagagc gtttatggga tgcacaatcc 300
 actctacaac aagatcaaaa taaactatcg caagaacatt ttgaagctgt cagtgtgatc 360
 attgatttaa tcaatggtga tctgaatgat atagctgagc atacgcaaca aaacttacia 420
 accaaaaaag aagaagaaca cgagtccggt gcccgtaaga tggccaattg ggtgtcttct 480
 ggagaagaag tgtaaataag agcccttctc tacttctcag ataggaatgg agaacgggaa 540
 aatttagcag acttttttaa agtacagtat gctgttcaaa gagcaacgca aagagcagaa 600
 ctttttgcta gtatcgtagg aactacggta agtagtataa agacgataat gaccacacaa 660
 ttaggttaa 669

<210> 45
 <211> 222
 <212> PRT
 <213> Chlamydia psittaci

<400> 45
 Met Val Asp Pro Leu Lys Leu Phe Pro Lys Leu Asp Ser Glu Lys Glu
 1 5 10 15
 Thr Ala Ser Ile Gln Lys Pro Leu Gly Thr Pro Leu Ala Ser Glu Leu
 20 25 30
 His Lys Glu Val Pro Ala Phe Ser Leu Gly Thr Ala Ala Asp Ser Leu
 35 40 45
 Asn Lys Asn Ile Glu Asp Val Lys Pro Asn Pro Met Ala Met Met Gln
 50 55 60
 Asp Arg Asn Ser Asn Ile Ile Asp Pro Glu Leu Glu Glu Ala Leu Asp
 65 70 75 80
 Ser Glu Glu Leu Lys Glu Gln Ile Asn Asn Leu Lys Glu Arg Leu Trp
 85 90 95

Asp Ala Gln Ser Thr Leu Gln Gln Asp Gln Asn Lys Leu Ser Gln Glu
 100 105 110
 His Phe Glu Ala Val Ser Val Ile Ile Asp Leu Ile Asn Gly Asp Leu
 115 120 125
 Asn Asp Ile Ala Glu His Thr Gln Gln Asn Leu Gln Thr Lys Lys Glu
 130 135 140
 Glu Glu His Glu Ser Val Ala Arg Lys Met Val Asn Trp Val Ser Ser
 145 150 155 160
 Gly Glu Glu Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser Asp Arg Asn
 165 170 175
 Gly Glu Arg Glu Asn Leu Ala Asp Phe Leu Lys Val Gln Tyr Ala Val
 180 185 190
 Gln Arg Ala Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile Val Gly Thr
 195 200 205
 Thr Val Ser Ser Ile Lys Thr Ile Met Thr Thr Gln Leu Gly
 210 215 220

<210> 46
 <211> 1329
 <212> DNA
 <213> Chlamydia psittaci

<400> 46
 atggacgaat tgacgacaga tttcgatacc ctcattgtcgc aattgaacga cgtacacttg 60
 actaccgttg tcggtcgtat aactgaagtc gtcgggtatgt taattaaagc tgctcgtccc 120
 aatgtacgag ttggggaggt atgcttagtt aaacggttatg gtatggagcc gctcgtgacc 180
 gaagtcgtcg gcttcacaca aaatttcgct tttttatcgc cactaggaga acttactgga 240
 gtcagccctt cttcagaggt tattcccaca ggtctgcctt tgtatatccg tgcaggtaac 300
 ggtcttttag gtcgtgtatt gaatggctctg ggagaacctc tcgactccga gatcaaagga 360
 ccttttggttg atgttaacga aacctaccct gtgttttcgcg ctccaccaga tccattgcat 420
 agagaaaaat taagaacaat tttatccacc ggcgtgcggt gtatcgacgg tatgctcaca 480
 gtcgccagag gccagcgtat aggcattttt gctggagctg ggggtgggtaa atcgtctctc 540
 ttgggaatga tcgctagaaa cgcggaagaa gccgatgtca atgtgattgc tctcatcgga 600
 gagcggggcc gagagggttcg tgaatttatc gagggcgatc tcggagaaga aggaatgaaa 660
 cgttcggtga tcgctcgtctc tacttcagat caatcctcac agttgcgatt aaatgctgct 720
 tacgtaggca ccgctatagc agagtatttt cgtgatcagg gcaaaaaccgt agttttgatg 780
 atggattctg tcacccgatt tgcccagacc ctaagagaag tcgggtctagc tgccggagaa 840
 ccgccagctc gaggaggata cacaccttct gtattctcaa ctttgcttag gttattagaa 900
 cgttcgagag cttcggataa aggaacaatc acagcctttt acacagtagt tgttgccggg 960
 gatgatatga atgaaccggt cgctgatgaa gttaaatcga ttcttgatgg tcacgttgct 1020
 ttgtctaacg ctttagctca ggcataccat tatcctgcta ttgatgtctt agcatctatc 1080
 agccgattgc tgacagcaat tgttcctgag gaacaacgac gcatcatagg aaaagcccga 1140
 gaggtgctgg caaaatacaa agcaaacgaa atgcttatac gtattggaga atatcgccga 1200
 ggggtccgatc gtgaagtgga ttttgctata gatcacattg ataaattgaa cagattctta 1260
 aagcaagata ttcattgaaa aacaaattac gaggaagcct cgcaacagct tcggggctatt 1320
 ttccgataa 1329

<210> 47

<211> 442

<212> PRT

<213> Chlamydia psittaci

<400> 47

Met Asp Glu Leu Thr Thr Asp Phe Asp Thr Leu Met Ser Gln Leu Asn
1 5 10 15

Asp Val His Leu Thr Thr Val Val Gly Arg Ile Thr Glu Val Val Gly
20 25 30

Met Leu Ile Lys Ala Val Val Pro Asn Val Arg Val Gly Glu Val Cys
35 40 45

Leu Val Lys Arg Tyr Gly Met Glu Pro Leu Val Thr Glu Val Val Gly
50 55 60

Phe Thr Gln Asn Phe Ala Phe Leu Ser Pro Leu Gly Glu Leu Thr Gly
65 70 75 80

Val Ser Pro Ser Ser Glu Val Ile Pro Thr Gly Leu Pro Leu Tyr Ile
85 90 95

Arg Ala Gly Asn Gly Leu Leu Gly Arg Val Leu Asn Gly Leu Gly Glu
100 105 110

Pro Ile Asp Ser Glu Ile Lys Gly Pro Leu Val Asp Val Asn Glu Thr
115 120 125

Tyr Pro Val Phe Arg Ala Pro Pro Asp Pro Leu His Arg Glu Lys Leu
130 135 140

Arg Thr Ile Leu Ser Thr Gly Val Arg Cys Ile Asp Gly Met Leu Thr
145 150 155 160

Val Ala Arg Gly Gln Arg Ile Gly Ile Phe Ala Gly Ala Gly Val Gly
165 170 175

Lys Ser Ser Leu Leu Gly Met Ile Ala Arg Asn Ala Glu Glu Ala Asp
180 185 190

Val Asn Val Ile Ala Leu Ile Gly Glu Arg Gly Arg Glu Val Arg Glu
195 200 205

Phe Ile Glu Gly Asp Leu Gly Glu Glu Gly Met Lys Arg Ser Val Ile
210 215 220

Val Val Ser Thr Ser Asp Gln Ser Ser Gln Leu Arg Leu Asn Ala Ala
225 230 235 240

Tyr Val Gly Thr Ala Ile Ala Glu Tyr Phe Arg Asp Gln Gly Lys Thr

25103618.1

245	250	255
Val Val Leu Met Met Asp Ser Val Thr Arg Phe Ala Arg Ala Leu Arg		
260	265	270
Glu Val Gly Leu Ala Ala Gly Glu Pro Pro Ala Arg Gly Gly Tyr Thr		
275	280	285
Pro Ser Val Phe Ser Thr Leu Pro Arg Leu Leu Glu Arg Ser Gly Ala		
290	295	300
Ser Asp Lys Gly Thr Ile Thr Ala Phe Tyr Thr Val Leu Val Ala Gly		
305	310	315
Asp Asp Met Asn Glu Pro Val Ala Asp Glu Val Lys Ser Ile Leu Asp		
325	330	335
Gly His Val Val Leu Ser Asn Ala Leu Ala Gln Ala Tyr His Tyr Pro		
340	345	350
Ala Ile Asp Val Leu Ala Ser Ile Ser Arg Leu Leu Thr Ala Ile Val		
355	360	365
Pro Glu Glu Gln Arg Arg Ile Ile Gly Lys Ala Arg Glu Val Leu Ala		
370	375	380
Lys Tyr Lys Ala Asn Glu Met Leu Ile Arg Ile Gly Glu Tyr Arg Arg		
385	390	395
Gly Ser Asp Arg Glu Val Asp Phe Ala Ile Asp His Ile Asp Lys Leu		
405	410	415
Asn Arg Phe Leu Lys Gln Asp Ile His Glu Lys Thr Asn Tyr Glu Glu		
420	425	430
Ala Ser Gln Gln Leu Arg Ala Ile Phe Arg		
435	440	

<210> 48

<211> 477

<212> DNA

<213> Chlamydia psittaci

<400> 48

```

cttcttgcag atgccgactc tgtcaacctt gcaactggat tcaacggctc cactagtga 60
actttcaatg ttaaacaac agataatgct gacgggacaa catatattct aggcagcgcg 120
atcacctttg aacacataaa tcaattaaaa ccagcaaaca ctagctgttt tgctaataca 180
gctggagatc taacgtttac tgggaatcga cgacttctct atttcaataa tatttcatca 240
acagcgaaag gtgccgctat cagcacaact gcggatggta agacactcac aatatccggg 300
gctctacaac tgattttcta catgtcgcca agattggcca cgggaaatgg cgtcatttat 360
tctaatagct ctgtactcat cgagaacaat tctcaaggta gctcgggact gaataagtct 420
gcaggggaaag gcgtctttat ttgttgtgag aaaagtacgg atgtgggagc tacatca 477

```


<210> 49
 <211> 159
 <212> PRT
 <213> Chlamydia psittaci

<400> 49
 Leu Leu Ala Asp Ala Asp Ser Val Asn Leu Ala Thr Gly Phe Asn Gly
 1 5 10 15
 Ser Thr Ser Glu Thr Phe Asn Val Lys Gln Thr Asp Asn Ala Asp Gly
 20 25 30
 Thr Thr Tyr Ile Leu Gly Ser Ala Ile Thr Phe Glu His Ile Asn Gln
 35 40 45
 Leu Lys Pro Ala Asn Thr Ser Cys Phe Ala Asn Thr Ala Gly Asp Leu
 50 55 60
 Thr Phe Thr Gly Asn Arg Arg Leu Leu Tyr Phe Asn Asn Ile Ser Ser
 65 70 75 80
 Thr Ala Lys Gly Ala Ala Ile Ser Thr Thr Ala Asp Gly Lys Thr Leu
 85 90 95
 Thr Ile Ser Gly Ala Leu Gln Leu Ile Phe Tyr Met Ser Pro Arg Leu
 100 105 110
 Ala Thr Gly Asn Gly Val Ile Tyr Ser Asn Ser Ser Val Leu Ile Glu
 115 120 125
 Asn Asn Ser Gln Gly Ser Ser Gly Leu Asn Lys Ser Ala Gly Lys Gly
 130 135 140
 Val Phe Ile Cys Cys Glu Lys Ser Thr Asp Val Gly Ala Thr Ser
 145 150 155

<210> 50
 <211> 591
 <212> DNA
 <213> Chlamydia psittaci

<400> 50
 acctttgaac acataaatca attaaaacca gcaaacacta gctgttttgc taatacagct 60
 ggagatctaa cgtttactgg gaatcgacga cttctctatt tcaataatat ttcatacaaca 120
 gcgaaagggtg ccgctatcag cacaactgcg gatggtaaga cactcacaat atccgggggct 180
 ctacaactga ttttctacat gtcgccaaga ttggccacgg gaaatggcgt catttattct 240
 aatagctctg tactcatcga gaacaattct caaggtagct cgggactgaa taagtctgca 300
 gggaaaggcg tctttatttg ttgtgagaaa agtacggatg tgggagctac atcaccgaca 360
 ttaatcatatc ggaataacgg agagtttctt actgtaggta atgcagctac tagctctgga 420
 ggagcgattt atgocggagaa aatgatctta tcctcaggag gatatacaaa atttcaatcc 480
 aatgtagct atgatcaagg tggggccatt gccattgctc ctaatggaga aattagtctc 540
 tccgcggata aaggaaatat cgtctttgaa agaaacctta aaattgcca c 591

<210> 51
 <211> 197
 <212> PRT
 <213> Chlamydia psittaci

<400> 51

Thr	Phe	Glu	His	Ile	Asn	Gln	Leu	Lys	Pro	Ala	Asn	Thr	Ser	Cys	Phe
1				5					10					15	
Ala	Asn	Thr	Ala	Gly	Asp	Leu	Thr	Phe	Thr	Gly	Asn	Arg	Arg	Leu	Leu
			20					25					30		
Tyr	Phe	Asn	Asn	Ile	Ser	Ser	Thr	Ala	Lys	Gly	Ala	Ala	Ile	Ser	Thr
		35					40					45			
Thr	Ala	Asp	Gly	Lys	Thr	Leu	Thr	Ile	Ser	Gly	Ala	Leu	Gln	Leu	Ile
	50					55					60				
Phe	Tyr	Met	Ser	Pro	Arg	Leu	Ala	Thr	Gly	Asn	Gly	Val	Ile	Tyr	Ser
65					70					75					80
Asn	Ser	Ser	Val	Leu	Ile	Glu	Asn	Asn	Ser	Gln	Gly	Ser	Ser	Gly	Leu
			85						90					95	
Asn	Lys	Ser	Ala	Gly	Lys	Gly	Val	Phe	Ile	Cys	Cys	Glu	Lys	Ser	Thr
			100					105						110	
Asp	Val	Gly	Ala	Thr	Ser	Pro	Thr	Leu	Ile	Ile	Arg	Asn	Asn	Gly	Glu
		115					120					125			
Phe	Leu	Thr	Val	Gly	Asn	Ala	Ala	Thr	Ser	Ser	Gly	Gly	Ala	Ile	Tyr
	130					135					140				
Ala	Glu	Lys	Met	Ile	Leu	Ser	Ser	Gly	Gly	Tyr	Thr	Lys	Phe	Gln	Ser
145					150					155					160
Asn	Val	Ser	Tyr	Asp	Gln	Gly	Gly	Ala	Ile	Ala	Ile	Ala	Pro	Asn	Gly
			165					170						175	
Glu	Ile	Ser	Leu	Ser	Ala	Asp	Lys	Gly	Asn	Ile	Val	Phe	Glu	Arg	Asn
		180						185					190		
Leu	Lys	Ile	Ala	Asn											
		195													

<210> 52
 <211> 2040
 <212> DNA
 <213> Chlamydia psittaci

<400> 52

```

atgcagggaa tactaatgaa aaactctatt tatgggggttt tactgttttc ctcttttggc 60
ttatccactg ctaccaaact tcttgagat gccgactctg tcaaccttgc aactggattc 120
aacggctcca ctagtgaac tttcaatggt aaacaaacag ataatgctga cgggacaaca 180
tatattctag gcagcgcgat cacctttgaa cacataaatc aattaaaacc agcaaact 240
agctgttttg ctaatacagc tggagatcta acgtttactg ggaatcgacg acttctctat 300
ttcaataata tttcatcaac agcgaaagggt gccgctatca gcacaactgc ggatggtaag 360
acactcacia tatccggggc tctacaactg attttctaca tgcgccaaag attggccacg 420
ggaaatggcg tcattttatt taatagctct gtactcatcg agaacaattc tcaaggtagc 480
tcgggactga ataagtctgc agggaaaggc gtcttttatt gttgtgagaa aagtacggat 540
gtgggagcta catcaccgac attaatcata cgggaataac gagagtctct tactgtagg 600
aatgcagcta ctagctctgg aggagcgatt tatgcggaga aaatgatctt atcctcagga 660
ggatatacaa aatttcaatc caatgtagc tatgatcaag gtggggccat tgccattgct 720
cctaattggag aaattagtct ctccgcggat aaaggaaata tcgtctttga aagaaacctt 780
aaaattgcca acaaaacaaa tactcccaat gccattcacc taggagacaa tgcgaaattt 840
cttcaattac gtgctgctaa caacaaaggc atattttttt atgacccgat tacaaccacg 900
ggatctgtgg cagatcggtt aattattaat aactcgcaag gagaagcctc gacttacgat 960
ggggcgattg tattttctag tctcaactta ttcactcatt cccctgaatg taaactctct 1020
tcattttctc aaggctttac tttagcggca ggatcattag ttttagaaga gggggtatgt 1080
gtacaagctc cgtcttttga tcaacgtgct cactcccaac tattcatgaa tcctgggacg 1140
aagttacaag ctaccagaa catctcggtt aagaatctcc atctcaatct taatagaata 1200
gcagaagagc cggcgatat caccacaaca gacgatgctt ctagtgtgga catttgcgga 1260
cctgtagtta tgcatataga tgatgagatc ttctataatc agacagtatt agcaaagtag 1320
ttgtctgtag agtgttttaa tctcagttct ccacatctcg ataatatcac tattgatgac 1380
gttcccgcag tgcttatcat gacgttagaa tcgcatcgtg gttatcaagg tacatgggaa 1440
atctcttgga aagagcaacc taaacttacc tttgggaagg cgactatcgc gcctaataag 1500
cagatgcacc ttatttgga accttctggt tacgttcctt tctcaggggg aactggagag 1560
tttacgacat ctttagtgcc taatagctta tggaaatctt ttttagatac acgtttttct 1620
caacaagcga ttgagaaaca tgctgtatct tcaggtaacg gtatatggat ttctcccatg 1680
accaattctt ttcttcaagg ttctacgaac aacaaccacg gctttcgtca taagagttca 1740
ggatataccg caggggggaaa aatacaaaca cttcaagatg atatctttag tgtcagtttt 1800
tctcagctat ttgggagatc taaggatttt ggatctgcca catctaagga tacattccta 1860
tcgggctcta tctatgctca gcattcgaga cgcttacttc ctataatgag attccttgca 1920
ggaacatcaa catatagacc gcgactctta ctgagtattc ccaagaatct tcctatcaat 1980
tttgatgttc ttgtgagtta cagctatgac agtaaccaca tgaaagtaca aaaattctaa 2040

```

<210> 53

<211> 679

<212> PRT

<213> Chlamydia psittaci

<400> 53

```

Met Gln Gly Ile Leu Met Lys Asn Ser Ile Tyr Gly Val Leu Leu Phe
  1             5             10             15

```

```

Ser Ser Phe Ala Leu Ser Thr Ala Thr Lys Leu Leu Ala Asp Ala Asp
  20             25             30

```

```

Ser Val Asn Leu Ala Thr Gly Phe Asn Gly Ser Thr Ser Glu Thr Phe
  35             40             45

```

```

Asn Val Lys Gln Thr Asp Asn Ala Asp Gly Thr Thr Tyr Ile Leu Gly
  50             55             60

```

Ser	Ala	Ile	Thr	Phe	Glu	His	Ile	Asn	Gln	Leu	Lys	Pro	Ala	Asn	Thr	
65					70					75					80	
Ser	Cys	Phe	Ala	Asn	Thr	Ala	Gly	Asp	Leu	Thr	Phe	Thr	Gly	Asn	Arg	
				85					90					95		
Arg	Leu	Leu	Tyr	Phe	Asn	Asn	Ile	Ser	Ser	Thr	Ala	Lys	Gly	Ala	Ala	
			100					105					110			
Ile	Ser	Thr	Thr	Ala	Asp	Gly	Lys	Thr	Leu	Thr	Ile	Ser	Gly	Ala	Leu	
			115					120					125			
Gln	Leu	Ile	Phe	Tyr	Met	Ser	Pro	Arg	Leu	Ala	Thr	Gly	Asn	Gly	Val	
						135					140					
Ile	Tyr	Ser	Asn	Ser	Ser	Val	Leu	Ile	Glu	Asn	Asn	Ser	Gln	Gly	Ser	
145					150				155						160	
Ser	Gly	Leu	Asn	Lys	Ser	Ala	Gly	Lys	Gly	Val	Phe	Ile	Cys	Cys	Glu	
				165					170					175		
Lys	Ser	Thr	Asp	Val	Gly	Ala	Thr	Ser	Pro	Thr	Leu	Ile	Ile	Arg	Asn	
			180					185						190		
Asn	Gly	Glu	Phe	Leu	Thr	Val	Gly	Asn	Ala	Ala	Thr	Ser	Ser	Gly	Gly	
		195					200					205				
Ala	Ile	Tyr	Ala	Glu	Lys	Met	Ile	Leu	Ser	Ser	Gly	Gly	Tyr	Thr	Lys	
						215					220					
Phe	Gln	Ser	Asn	Val	Ser	Tyr	Asp	Gln	Gly	Gly	Ala	Ile	Ala	Ile	Ala	
225					230					235					240	
Pro	Asn	Gly	Glu	Ile	Ser	Leu	Ser	Ala	Asp	Lys	Gly	Asn	Ile	Val	Phe	
				245					250					255		
Glu	Arg	Asn	Leu	Lys	Ile	Ala	Asn	Lys	Gln	Asn	Thr	Pro	Asn	Ala	Ile	
			260					265					270			
His	Leu	Gly	Asp	Asn	Ala	Lys	Phe	Leu	Gln	Leu	Arg	Ala	Ala	Asn	Asn	
			275				280					285				
Lys	Ala	Ile	Phe	Phe	Tyr	Asp	Pro	Ile	Thr	Thr	Thr	Gly	Ser	Val	Ala	
						295					300					
Asp	Arg	Leu	Ile	Ile	Asn	Asn	Ser	Gln	Gly	Glu	Ala	Ser	Thr	Tyr	Asp	
305					310					315					320	
Gly	Ala	Ile	Val	Phe	Ser	Ser	Leu	Asn	Leu	Phe	Thr	His	Ser	Pro	Glu	
				325					330					335		
Cys	Lys	Leu	Ser	Ser	Phe	Ser	Gln	Gly	Leu	Thr	Leu	Ala	Ala	Gly	Ser	
			340					345						350		

Gly Thr Ser Thr Tyr Arg Pro Arg Leu Leu Leu Ser Ile Pro Lys Asn
645 650 655

Leu Pro Ile Asn Phe Asp Val Leu Val Ser Tyr Ser Tyr Asp Ser Asn
660 665 670

His Met Lys Val Gln Lys Phe
675

<210> 54
<211> 487
<212> DNA
<213> Chlamydia psittaci

<400> 54
acctcgagag aggtattctct tagtgtggct ttctgtcagt tatttgcaaa agataaagac 60
taccttgtaa gcaagaacgc cgcaaacgct tatgcgggtt ctgtatatta tcagcatgtg 120
agcaagtttg atgatctcac gcggttattt aatgggccta acacgtgttg ttcaggggtt 180
tctaaagaga ttctattttt cttggatgca caaattacct attgccacac ggccaacaac 240
atgacaacgt cctatacaga ctatcctgaa gtgaaagggt cttggggtaa tgataccctg 300
ggcttaactt tgtctactag cgtacctatc ccggtattta gttcttctat ctttgatagt 360
tatgcaccgt ttgcaaaatt acaagttgtc tatgcgcacc aagatgactt taaagaacca 420
acaacagaag gccgggtctt tgaaagcagc gatcttctca acgtttctgt acctataggt 480
ataaaat 487

<210> 55
<211> 162
<212> PRT
<213> Chlamydia psittaci

<400> 55
Thr Ser Arg Glu Asp Ser Leu Ser Val Ala Phe Cys Gln Leu Phe Ala
1 5 10 15
Lys Asp Lys Asp Tyr Leu Val Ser Lys Asn Ala Ala Asn Val Tyr Ala
20 25 30
Gly Ser Val Tyr Tyr Gln His Val Ser Lys Phe Asp Asp Leu Thr Arg
35 40 45
Leu Phe Asn Gly Pro Asn Thr Cys Cys Ser Gly Phe Ser Lys Glu Ile
50 55 60
Pro Ile Phe Leu Asp Ala Gln Ile Thr Tyr Cys His Thr Ala Asn Asn
65 70 75 80
Met Thr Thr Ser Tyr Thr Asp Tyr Pro Glu Val Lys Gly Ser Trp Gly
85 90 95
Asn Asp Thr Leu Gly Leu Thr Leu Ser Thr Ser Val Pro Ile Pro Val
100 105 110

Phe Ser Ser Ser Ile Phe Asp Ser Tyr Ala Pro Phe Ala Lys Leu Gln
 115 120 125

Val Val Tyr Ala His Gln Asp Asp Phe Lys Glu Pro Thr Thr Glu Gly
 130 135 140

Arg Val Phe Glu Ser Ser Asp Leu Leu Asn Val Ser Val Pro Ile Gly
 145 150 155 160

Ile Lys

<210> 56

<211> 2781

<212> DNA

<213> Chlamydia psittaci

<400> 56

```

atgaggcctt ctttatataa gattttaata tcgtcgacgc tgacgttacc aatatctttt 60
cacttctcgc aattgcatgc agaagtggct ttaactcaag aatctattct cgatgcaaat 120
ggagcattca gtccgcaatc tacaagcact gcgggaggaa cgatttacia cgtcgagagt 180
gatatttcta ttgtagatgt aggacagaca gcggctcttg cttoctcagc ttttgttcag 240
actgcagaca acctaaacttt caaagggaac aaccatagct tatccataac gaacgcgaat 300
gccggagcta atcctgcggg aattaacggt aacactgccg ataagattct tacgctgaca 360
gatttttcta agttgagctt taaggaatgc ccatcttctc tagtgaatac tggaaaaggg 420
gctatgaaat ccggaggagc attaaactta gcgaataatg ccagtattct gtttgatcag 480
aactattccg ctgagaatgg tggagccatc tcttgcaaaag ctttttctct aaccggctcg 540
agcaaagaaa tcagcttcac cactaactct actgcgaaaa aaggtggagc gattgctgct 600
acgggaatag ctcatctttc ggacaaccaa ggcacaatca gattttctgg gaacactgct 660
gtgaattctg ggggagcagt atattcagaa gcttctatga cgattgcagg taacaaccac 720
gttgctttta gcaacaatgc tgtttcgggt tcactctgat gttgcgggtg agctatccat 780
tgtagcaaaa caggttcagc accgaccctt actataagag ataacaaagt cttgattttt 840
gaggaaaata cttcttcagc aaaagggtgga gcgatttaca ccgataaact catattgact 900
tctggtgggc ctacggcatt tatcaataac aaagttaccc atgctacacc taaggggtgga 960
gctattggta ttgctgccaa tggagaatgt agcttaaccg ctgaacatgg ggatattact 1020
tttgataata acctgatggc cacacaagac aatgctacaa taaaaagaaa tgccattaac 1080
attgaaggca atggtaaatt cgtcaactta cgtgcagcgt ctggaaagac gatttctttc 1140
tatgatccta tcacagttga aggtaatgct gctgatcttc tcactttgaa taaagctgag 1200
ggtgataaaa cgtataatgg aagaattatt ttttcaggag aaaagctcac tgaagaacaa 1260
gctgctgttg cggataacct aaagacaaca tttacacagc ctatcacttt agctgctggt 1320
gaacttggtg tacgcagcgg tgtggaagta gaagcaaaaa cagtcgtgca aacagcagga 1380
tctttgattc tgatggatgc aggcacaaag ttatccgcaa aaacagaaga tgctacactg 1440
acgaatctgg ctattaatcc gaatacctta gatgggaaaa aattcgccgt agtcgatgcc 1500
gttgctgctg ggaagaatgt gactttatca ggtgctattg gcgttattga tcctacaggg 1560
aagttttatg aaaaccataa gctaaatgat acgtagctt taggaggaat tcaactttct 1620
gggaaagggt cggtgacaac aaccaacgtg cctagtcagt ttgttggtg tgctgaaacc 1680
cactatgggt atcaaggaaa ctggtctgtc agttgggtca aagataataa ctctgatcct 1740
aaaacacaaa cagcaatctt tacctggaat aaaacaggat atgttccaaa tcctgaacgt 1800
cgtgctccgc tagtactcaa tagcctttgg ggatccttta tagatttacg ttctattcaa 1860
gatgtcttgg aacgtagtgt tgatagtatt cttgagacac gtcgtggttt gtgggtctct 1920
ggaattggga acttcttcca taaagatcgg aatgctgaaa atcgcaaat ccgtcatatc 1980
agttcgggat atgtgttagg agccacaaca aatacctcga gagaggattc tcttagtgtg 2040
gctttctgtc agttatttgc aaaagataaa gactaccttg taagcaagaa cgccgcaaac 2100

```

```

gtctatgCGG gttctgtata ttatcagcat gtgagcaagt ttgatgatct cacgcgggta 2160
tttaaatgggc ctaacacgtg ttgttcaggg ttttctaaag agattcctat tttcttgga 2220
gcacaaatta cctattgcc aacggccaac aacatgacaa cgtcctatac agactatcct 2280
gaagtgaag gttcttggg taatgatacc ctgggcttaa ctttgtctac tagcgta 2340
atcccgggtat ttagttcttc tatctttgat agttatgcac cgtttgcaaa attacaagt 2400
gtctatgCGC accaagatga ctttaaagaa ccaacaacag aaggccgggt ctttgaaagc 2460
agcgatcttc tcaacgtttc tgtacctata ggtataaaat ttgagaaact ctctatgga 2520
gagagaagtg cttatgatct tacactgatg tatatacctg atgtgtaccg tcataatcca 2580
agctgtatga caggattggc gatcaatgac gtttctctgg taaccacagc tacgaatctt 2640
gctagacaag ctttcatagt tcgcgcgggt aaccatattg ccttaacctc tgggtgttgag 2700
atgttcagtc agtttggtt cgaattacga agctcttcaa gaaattataa cgtagatctt 2760
ggcgctaagg tcgcgttcta a 2781

```

<210> 57

<211> 926

<212> PRT

<213> Chlamydia psittaci

<400> 57

```

Met Arg Pro Ser Leu Tyr Lys Ile Leu Ile Ser Ser Thr Leu Thr Leu
  1             5             10             15

Pro Ile Ser Phe His Phe Ser Gln Leu His Ala Glu Val Ala Leu Thr
      20             25             30

Gln Glu Ser Ile Leu Asp Ala Asn Gly Ala Phe Ser Pro Gln Ser Thr
      35             40             45

Ser Thr Ala Gly Gly Thr Ile Tyr Asn Val Glu Ser Asp Ile Ser Ile
      50             55             60

Val Asp Val Gly Gln Thr Ala Ala Leu Ala Ser Ser Ala Phe Val Gln
      65             70             75             80

Thr Ala Asp Asn Leu Thr Phe Lys Gly Asn Asn His Ser Leu Ser Ile
      85             90             95

Thr Asn Ala Asn Ala Gly Ala Asn Pro Ala Gly Ile Asn Val Asn Thr
      100            105            110

Ala Asp Lys Ile Leu Thr Leu Thr Asp Phe Ser Lys Leu Ser Phe Lys
      115            120            125

Glu Cys Pro Ser Ser Leu Val Asn Thr Gly Lys Gly Ala Met Lys Ser
      130            135            140

Gly Gly Ala Leu Asn Leu Ala Asn Asn Ala Ser Ile Leu Phe Asp Gln
      145            150            155            160

Asn Tyr Ser Ala Glu Asn Gly Gly Ala Ile Ser Cys Lys Ala Phe Ser
      165            170            175

Leu Thr Gly Ser Ser Lys Glu Ile Ser Phe Thr Thr Asn Ser Thr Ala

```

25103618.1

180					185					190					
Lys	Lys	Gly	Gly	Ala	Ile	Ala	Ala	Thr	Gly	Ile	Ala	His	Leu	Ser	Asp
	195						200					205			
Asn	Gln	Gly	Thr	Ile	Arg	Phe	Ser	Gly	Asn	Thr	Ala	Val	Asn	Ser	Gly
	210					215					220				
Gly	Ala	Val	Tyr	Ser	Glu	Ala	Ser	Met	Thr	Ile	Ala	Gly	Asn	Asn	His
225					230					235					240
Val	Ala	Phe	Ser	Asn	Asn	Ala	Val	Ser	Gly	Ser	Ser	Asp	Gly	Cys	Gly
				245					250					255	
Gly	Ala	Ile	His	Cys	Ser	Lys	Thr	Gly	Ser	Ala	Pro	Thr	Leu	Thr	Ile
			260					265					270		
Arg	Asp	Asn	Lys	Val	Leu	Ile	Phe	Glu	Glu	Asn	Thr	Ser	Ser	Ala	Lys
	275						280					285			
Gly	Gly	Ala	Ile	Tyr	Thr	Asp	Lys	Leu	Ile	Leu	Thr	Ser	Gly	Gly	Pro
	290					295					300				
Thr	Ala	Phe	Ile	Asn	Asn	Lys	Val	Thr	His	Ala	Thr	Pro	Lys	Gly	Gly
305						310					315				320
Ala	Ile	Gly	Ile	Ala	Ala	Asn	Gly	Glu	Cys	Ser	Leu	Thr	Ala	Glu	His
				325					330					335	
Gly	Asp	Ile	Thr	Phe	Asp	Asn	Asn	Leu	Met	Ala	Thr	Gln	Asp	Asn	Ala
			340					345					350		
Thr	Ile	Lys	Arg	Asn	Ala	Ile	Asn	Ile	Glu	Gly	Asn	Gly	Lys	Phe	Val
		355					360					365			
Asn	Leu	Arg	Ala	Ala	Ser	Gly	Lys	Thr	Ile	Ser	Phe	Tyr	Asp	Pro	Ile
	370					375					380				
Thr	Val	Glu	Gly	Asn	Ala	Ala	Asp	Leu	Leu	Thr	Leu	Asn	Lys	Ala	Glu
385						390					395				400
Gly	Asp	Lys	Thr	Tyr	Asn	Gly	Arg	Ile	Ile	Phe	Ser	Gly	Glu	Lys	Leu
				405					410					415	
Thr	Glu	Glu	Gln	Ala	Ala	Val	Ala	Asp	Asn	Leu	Lys	Thr	Thr	Phe	Thr
			420					425					430		
Gln	Pro	Ile	Thr	Leu	Ala	Ala	Gly	Glu	Leu	Val	Leu	Arg	Ser	Gly	Val
	435						440					445			
Glu	Val	Glu	Ala	Lys	Thr	Val	Val	Gln	Thr	Ala	Gly	Ser	Leu	Ile	Leu
	450					455					460				
Met	Asp	Ala	Gly	Thr	Lys	Leu	Ser	Ala	Lys	Thr	Glu	Asp	Ala	Thr	Leu

465		470		475		480
Thr Asn Leu Ala	Ile Asn Pro Asn Thr	Leu Asp Gly Lys Lys	Phe Ala			
	485	490	495			
Val Val Asp Ala	Val Ala Ala Gly Lys	Asn Val Thr Leu Ser	Gly Ala			
	500	505	510			
Ile Gly Val Ile	Asp Pro Thr Gly Lys	Phe Tyr Glu Asn His	Lys Leu			
	515	520	525			
Asn Asp Thr Leu	Ala Leu Gly Gly Ile	Gln Leu Ser Gly Lys	Gly Ser			
	530	535	540			
Val Thr Thr Thr	Asn Val Pro Ser His	Val Val Gly Val	Ala Glu Thr			
545	550	555	560			
His Tyr Gly Tyr	Gln Gly Asn Trp Ser	Val Ser Trp Val	Lys Asp Asn			
	565	570	575			
Asn Ser Asp Pro	Lys Thr Gln Thr	Ala Ile Phe Thr	Trp Asn Lys Thr			
	580	585	590			
Gly Tyr Val Pro	Asn Pro Glu Arg Arg	Ala Pro Leu Val	Leu Asn Ser			
	595	600	605			
Leu Trp Gly Ser	Phe Ile Asp Leu Arg	Ser Ile Gln Asp	Val Leu Glu			
	610	615	620			
Arg Ser Val Asp	Ser Ile Leu Glu Thr	Arg Arg Gly Leu	Trp Val Ser			
625	630	635	640			
Gly Ile Gly Asn	Phe Phe His Lys Asp	Arg Asn Ala Glu	Asn Arg Lys			
	645	650	655			
Phe Arg His Ile	Ser Ser Gly Tyr Val	Leu Gly Ala Thr	Thr Asn Thr			
	660	665	670			
Ser Arg Glu Asp	Ser Leu Ser Val	Ala Phe Cys Gln	Leu Phe Ala Lys			
	675	680	685			
Asp Lys Asp Tyr	Leu Val Ser Lys Asn	Ala Ala Asn Val	Tyr Ala Gly			
	690	695	700			
Ser Val Tyr Tyr	Gln His Val Ser Lys	Phe Asp Asp Leu	Thr Arg Leu			
705	710	715	720			
Phe Asn Gly Pro	Asn Thr Cys Cys Ser	Gly Phe Ser Lys	Glu Ile Pro			
	725	730	735			
Ile Phe Leu Asp	Ala Gln Ile Thr Tyr	Cys His Thr Ala	Asn Asn Met			
	740	745	750			
Thr Thr Ser Tyr	Thr Asp Tyr Pro Glu	Val Lys Gly Ser	Trp Gly Asn			

755	760	765
Asp Thr Leu Gly Leu Thr Leu Ser Thr Ser Val Pro Ile Pro Val Phe		
770	775	780
Ser Ser Ser Ile Phe Asp Ser Tyr Ala Pro Phe Ala Lys Leu Gln Val		
785	790	795 800
Val Tyr Ala His Gln Asp Asp Phe Lys Glu Pro Thr Thr Glu Gly Arg		
	805	810 815
Val Phe Glu Ser Ser Asp Leu Leu Asn Val Ser Val Pro Ile Gly Ile		
	820	825 830
Lys Phe Glu Lys Leu Ser Tyr Gly Glu Arg Ser Ala Tyr Asp Leu Thr		
	835	840 845
Leu Met Tyr Ile Pro Asp Val Tyr Arg His Asn Pro Ser Cys Met Thr		
	850	855 860
Gly Leu Ala Ile Asn Asp Val Ser Trp Leu Thr Thr Ala Thr Asn Leu		
865	870	875 880
Ala Arg Gln Ala Phe Ile Val Arg Ala Gly Asn His Ile Ala Leu Thr		
	885	890 895
Ser Gly Val Glu Met Phe Ser Gln Phe Gly Phe Glu Leu Arg Ser Ser		
	900	905 910
Ser Arg Asn Tyr Asn Val Asp Leu Gly Ala Lys Val Ala Phe		
	915	920 925

<210> 58
 <211> 559
 <212> DNA
 <213> Chlamydia psittaci

<400> 58
 tgtgttcatt ctttagcagg agttgcattt acgttgtttc tctgtgagca tatgtttacc 60
 aatatgcttg cttcttctta ttttaaggaa ggcagtgggt ttgttcagtt agtgagcaaa 120
 tttcatcaga ttcttggtct gaagatcata gaaattgttt ttttagccct accgtttact 180
 tgtcacgcta tcttaggtat tttctatctt tttcaagcgc aaactaatc acgggcttct 240
 gacggcagaa aaccgcggtt aatctatgcg agaaatcttg cctatacttg gcagagaaga 300
 actgcttgga ttttactttt cggctcttatt tttcacgtag ttcagtttcg ttttcttcgt 360
 tatctatttc atgtagagct gcatgggcaa acatactatg ttgtcgatat tgacgcttct 420
 cggtatgcgg cgatagtgcg gggtacacaa ggatttttta ctataaattt ttcagctcct 480
 caacttgaaa cgattcgttt ggataaagag gatcttgacg gcagcgcagt ttctcaatta 540
 ttagacagaa aagcgtatc 559

<210> 59
 <211> 186
 <212> PRT

<213> Chlamydia psittaci

<400> 59

Cys Val His Ser Leu Ala Gly Val Ala Phe Thr Leu Phe Leu Cys Glu
1 5 10 15

His Met Phe Thr Asn Met Leu Ala Ser Ser Tyr Phe Lys Glu Gly Ser
20 25 30

Gly Phe Val Gln Leu Val Ser Lys Phe His Gln Ile Pro Gly Leu Lys
35 40 45

Ile Ile Glu Ile Val Phe Leu Ala Leu Pro Phe Thr Cys His Ala Ile
50 55 60

Leu Gly Ile Phe Tyr Leu Phe Gln Ala Gln Thr Asn Ser Arg Ala Ser
65 70 75 80

Asp Gly Arg Lys Pro Ala Leu Ile Tyr Ala Arg Asn Leu Ala Tyr Thr
85 90 95

Trp Gln Arg Arg Thr Ala Trp Ile Leu Leu Phe Gly Leu Ile Phe His
100 105 110

Val Val Gln Phe Arg Phe Leu Arg Tyr Pro Ile His Val Glu Leu His
115 120 125

Gly Gln Thr Tyr Tyr Val Val Asp Ile Asp Ala Ser Arg Tyr Ala Ala
130 135 140

Ile Val Arg Gly Thr Gln Gly Phe Phe Thr Ile Asn Phe Ser Ala Pro
145 150 155 160

Gln Leu Glu Thr Ile Arg Leu Asp Lys Glu Asp Leu Asp Gly Ser Ala
165 170 175

Val Ser Gln Leu Leu Asp Arg Lys Ala Tyr
180 185

<210> 60

<211> 687

<212> DNA

<213> Chlamydia psittaci

<400> 60

atgatgaatg aaaaggaatc atgttctgag gctactcaga ggtcatggaa gtactacact 60
agctttgttt tacgttgtgt tcattcttta gcaggagttg catttacgtt gtttctctgt 120
gagcatatgt ttaccaatat gcttgcttct tcttatttta aggaaggcag tggttttgtt 180
cagttagtga gcaaatttca tcagattcct ggtctgaaga tcatagaaat tgttttttta 240
gccctaccgt ttacttgtea cgctatccta ggtattttct atctttttca agcgcaaact 300
aattcacggg cttctgacgg cagaaaaccc gcgttaatct atgcgagaaa tcttgccat 360
acttggcaga gaagaactgc ttggatttta cttttcggtc ttatttttca cgtagttcag 420
tttcgttttc ttcgttatcc tattcatgta gagctgcatg ggcaaacata ctatgttgtc 480

gatattgacg cttctcggta tgcggcgata gtgcggggta cacaaggatt ttttactata 540
aatttttcag ctcctcaact tgaaacgatt cgtttggata aagaggatct tgacggcagc 600
gcagttttctc aattattaga cagaaaagcg tatctcctga ctctaatgt tggaccgctt 660
ttctttatgt tgttcgggat tctttag 687

<210> 61

<211> 228

<212> PRT

<213> Chlamydia psittaci

<400> 61

Met Met Asn Glu Lys Glu Ser Cys Ser Glu Ala Thr Gln Arg Ser Trp
1 5 10 15

Lys Tyr Tyr Thr Ser Phe Val Leu Arg Cys Val His Ser Leu Ala Gly
20 25 30

Val Ala Phe Thr Leu Phe Leu Cys Glu His Met Phe Thr Asn Met Leu
35 40 45

Ala Ser Ser Tyr Phe Lys Glu Gly Ser Gly Phe Val Gln Leu Val Ser
50 55 60

Lys Phe His Gln Ile Pro Gly Leu Lys Ile Ile Glu Ile Val Phe Leu
65 70 75 80

Ala Leu Pro Phe Thr Cys His Ala Ile Leu Gly Ile Phe Tyr Leu Phe
85 90 95

Gln Ala Gln Thr Asn Ser Arg Ala Ser Asp Gly Arg Lys Pro Ala Leu
100 105 110

Ile Tyr Ala Arg Asn Leu Ala Tyr Thr Trp Gln Arg Arg Thr Ala Trp
115 120 125

Ile Leu Leu Phe Gly Leu Ile Phe His Val Val Gln Phe Arg Phe Leu
130 135 140

Arg Tyr Pro Ile His Val Glu Leu His Gly Gln Thr Tyr Tyr Val Val
145 150 155 160

Asp Ile Asp Ala Ser Arg Tyr Ala Ala Ile Val Arg Gly Thr Gln Gly
165 170 175

Phe Phe Thr Ile Asn Phe Ser Ala Pro Gln Leu Glu Thr Ile Arg Leu
180 185 190

Asp Lys Glu Asp Leu Asp Gly Ser Ala Val Ser Gln Leu Leu Asp Arg
195 200 205

Lys Ala Tyr Leu Leu Thr Pro Asn Val Gly Pro Leu Phe Phe Met Leu
210 215 220

Phe Gly Ile Leu
225

<210> 62
<211> 1329
<212> DNA
<213> Chlamydia psittaci

<400> 62
atgactctac aaccctacca agcatcctct agaaaagtacc gtccacaaat ctttcgagaa 60
attctagggtc agagctctgt tgcgctgta ttaaaaaatg ccttgggtctt caaccgagcc 120
gccacgcct atctatcttc tggaattcgt ggtacaggga aaaccacact agctcgcatt 180
ttagcaaaag ctctgaactg cgtgcatctt agcgaggatg gcgagccctg caaccagtgt 240
ttttcttgta aagagattgc ttcaggatcc tcttttagacg ttttagaaat tgacggagcc 300
tcccaccgtg gtatcgaaga tatccgtcaa attaatgaaa ctgtattatt cactcctgta 360
aaagcaaaagt ttaaaattta tatcatagat gaagttcata tgctcactaa ggaagccttc 420
aatgctttat tgaagacttt agaagagcct ccacaacatg taaaattttt ctttgcaact 480
acagaaatcc ataaaattcc cggaactatt ttaagtcgtt gtcaaaaaat gcatcttcaa 540
aggattcctg aaaaaacgat cctggagaag ctatcgctta tggctcaaga tgaccatatt 600
gaggcgctgc aagaagcatt ggcgccgatc gcccgtcgag cacaaggaag cttgcgtgat 660
gcagaatctc tttatgacta cgtaatatct ttatttccta aatctctctc tcccgcacacg 720
gttgcccaag ctttaggctt tgcttcccaa gattctctcc ggactttaga caatgcgatt 780
cttcaaaggg actatgacgac agccttaggg atcgtaacgg acttctttaa ttctggggta 840
gcacctgtca catttctcca tgacctaca ttattttatc gtaatcttct tcttacgaat 900
tctacaacaa gcaagttcag ctctcagtat aagacggagc agcttctaga aatcatagat 960
ttccttgag aatctgctaa gcacctaca aataccatct tcgaacagac attttttagaa 1020
accgtcatca ttcatatcat tcgcatttat caaaggcctg ttttatcaga gttgatctct 1080
tctattaaga gtcggcagtt tgaagggtc cgcaatatta aggagcccac cttgacgcag 1140
caagtatcag ctctcacc tcagcccacc tacaaagaac agagtttttt agagaaaaaa 1200
aatcaacctg ctgcggaagg taaaattata tctgtagaag ttaaaagctc agcttcaata 1260
aaatctgcag ctgtagacac attattacag tttgctgttg tagaattttc aggaatttta 1320
agacaataa 1329

<210> 63
<211> 442
<212> PRT
<213> Chlamydia psittaci

<400> 63
Met Thr Leu Gln Pro Tyr Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln
1 5 10 15
Ile Phe Arg Glu Ile Leu Gly Gln Ser Ser Val Val Ala Val Leu Lys
20 25 30
Asn Ala Leu Val Phe Asn Arg Ala Ala His Ala Tyr Leu Phe Ser Gly
35 40 45
Ile Arg Gly Thr Gly Lys Thr Thr Leu Ala Arg Ile Leu Ala Lys Ala
50 55 60
Leu Asn Cys Val His Leu Ser Glu Asp Gly Glu Pro Cys Asn Gln Cys

25103618.1

65		70		75		80
Phe Ser Cys Lys Glu Ile Ala Ser Gly Ser Ser Leu Asp Val Leu Glu						
	85			90		95
Ile Asp Gly Ala Ser His Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn						
	100			105		110
Glu Thr Val Leu Phe Thr Pro Val Lys Ala Lys Phe Lys Ile Tyr Ile						
	115			120		125
Ile Asp Glu Val His Met Leu Thr Lys Glu Ala Phe Asn Ala Leu Leu						
	130			135		140
Lys Thr Leu Glu Glu Pro Pro Gln His Val Lys Phe Phe Phe Ala Thr						
	145			150		155
Thr Glu Ile His Lys Ile Pro Gly Thr Ile Leu Ser Arg Cys Gln Lys						
	165			170		175
Met His Leu Gln Arg Ile Pro Glu Lys Thr Ile Leu Glu Lys Leu Ser						
	180			185		190
Leu Met Ala Gln Asp Asp His Ile Glu Ala Ser Gln Glu Ala Leu Ala						
	195			200		205
Pro Ile Ala Arg Ala Ala Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu						
	210			215		220
Tyr Asp Tyr Val Ile Ser Leu Phe Pro Lys Ser Leu Ser Pro Asp Thr						
	225			230		235
Val Ala Gln Ala Leu Gly Phe Ala Ser Gln Asp Ser Leu Arg Thr Leu						
	245			250		255
Asp Asn Ala Ile Leu Gln Arg Asp Tyr Ala Thr Ala Leu Gly Ile Val						
	260			265		270
Thr Asp Phe Leu Asn Ser Gly Val Ala Pro Val Thr Phe Leu His Asp						
	275			280		285
Leu Thr Leu Phe Tyr Arg Asn Leu Leu Leu Thr Asn Ser Thr Thr Ser						
	290			295		300
Lys Phe Ser Ser Gln Tyr Lys Thr Glu Gln Leu Leu Glu Ile Ile Asp						
	305			310		315
Phe Leu Gly Glu Ser Ala Lys His Leu Gln Asn Thr Ile Phe Glu Gln						
	325			330		335
Thr Phe Leu Glu Thr Val Ile Ile His Ile Ile Arg Ile Tyr Gln Arg						
	340			345		350
Pro Val Leu Ser Glu Leu Ile Ser Ser Ile Lys Ser Arg Gln Phe Glu						

355

360

365

Gly Leu Arg Asn Ile Lys Glu Pro Thr Leu Thr Gln Gln Val Ser Ala
 370 375 380

Pro Gln Pro Gln Pro Thr Tyr Lys Glu Gln Ser Phe Leu Glu Lys Lys
 385 390 395 400

Asn Gln Pro Ala Ala Glu Gly Lys Ile Ile Ser Val Glu Val Lys Ser
 405 410 415

Ser Ala Ser Ile Lys Ser Ala Ala Val Asp Thr Leu Leu Gln Phe Ala
 420 425 430

Val Val Glu Phe Ser Gly Ile Leu Arg Gln
 435 440

<210> 64

<211> 1479

<212> DNA

<213> Chlamydia psittaci

<400> 64

atgtatcgat atagtgccttt agaattagca aaagctgtga ctttagggga actgacagcc 60
 acaggggtga ctcaacattt ttttcataga atagaagaag ctgaggggca ggtaggtgcc 120
 tttatttcct tgtgtaagga acaagcttta gaacaggcag agctcataga taaaaagcgt 180
 tcgcgtggag aacctttagg aaaactcgca ggtgttcctg taggaattaa agataatatt 240
 cacgttacag gcctgaagac aacatgcgcc tctcgtgtgc tcgagaatta tcaaccaccg 300
 tttgatgcta ctggtttaga aagaatcaaa aaagaagatg ggattatctt aggcaaaactc 360
 aatatggatg agtttgctat gggatcaaca acgctatatt ctgcttttca tcctaccac 420
 aacccctggg atttatctcg tgttcctgga ggttcttcag ggggatctgc ggccgcagtt 480
 tctgctagat tttgtcccgt agccctagga tcagataccg gaggatccat ccgtcagccc 540
 gcagcatttt gtggtgttgt aggttttaag ccttcctacg gagccgtttc gcgttacggg 600
 cttgtagcct ttgcctcttc gctagatcaa atcggtcctt tagccaatac tgtagaagac 660
 gtgcgccctaa tgatggatgt gttttctggt agagatccta aagatgcaac ctcaagagag 720
 tttttccgtg attcttttat gagcaagttg tctacggagg ttcctaaagt gattgggggtg 780
 cctagaacat ttttagaggg actccgtgat gatattaggg agaatttctt ctcttcatta 840
 gccatttttg aaggagaagg aacccatctt gtggatgtgg agttggatat tctcagccac 900
 gctgtatcta tatattacat tttagcatct gctgaagctg ccacgaattt agcaagggtc 960
 gatgggggtgc gttatggata tcgttctcct caagcgcata ccatcagcca actctacgat 1020
 ctctcacgtg gagaaggatt tggcaaagag gtcatgcgca gaatcctctt aggggaactat 1080
 gtcttgctct cggagagaca gaatgtttat tataagaaaag ctacggcagt gcgtgctaag 1140
 attgtaaaag catttagaac tgcatttgaa aagtgtgaaa tcttagccat gcccgctctgt 1200
 tctagccccg cgtttgaaat aggagaaatt ctagatcctg tgactttata tctacaggat 1260
 atctatactg tagctatgaa tttagcgtat cttcctgcca ttgccgtacc ctctggattt 1320
 tctaaggagg gcctgccctt aggcctacag attatcggac agcaaggaca agaccaacaa 1380
 gtgtgcccaag tgggttacag tttccaagag catgcgcaaa ttaagcaatt gtttttctaag 1440
 agatatgcca aaagtgttgt tctaggaggt caatcatga 1479

<210> 65

<211> 492

<212> PRT

25103618.1

<213> Chlamydia psittaci

<400> 65

Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr Leu Gly
1 5 10 15

Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg Ile Glu
20 25 30

Glu Ala Glu Gly Gln Val Gly Ala Phe Ile Ser Leu Cys Lys Glu Gln
35 40 45

Ala Leu Glu Gln Ala Glu Leu Ile Asp Lys Lys Arg Ser Arg Gly Glu
50 55 60

Pro Leu Gly Lys Leu Ala Gly Val Pro Val Gly Ile Lys Asp Asn Ile
65 70 75 80

His Val Thr Gly Leu Lys Thr Thr Cys Ala Ser Arg Val Leu Glu Asn
85 90 95

Tyr Gln Pro Pro Phe Asp Ala Thr Val Val Glu Arg Ile Lys Lys Glu
100 105 110

Asp Gly Ile Ile Leu Gly Lys Leu Asn Met Asp Glu Phe Ala Met Gly
115 120 125

Ser Thr Thr Leu Tyr Ser Ala Phe His Pro Thr His Asn Pro Trp Asp
130 135 140

Leu Ser Arg Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala Ala Val
145 150 155 160

Ser Ala Arg Phe Cys Pro Val Ala Leu Gly Ser Asp Thr Gly Gly Ser
165 170 175

Ile Arg Gln Pro Ala Ala Phe Cys Gly Val Val Gly Phe Lys Pro Ser
180 185 190

Tyr Gly Ala Val Ser Arg Tyr Gly Leu Val Ala Phe Ala Ser Ser Leu
195 200 205

Asp Gln Ile Gly Pro Leu Ala Asn Thr Val Glu Asp Val Ala Leu Met
210 215 220

Met Asp Val Phe Ser Gly Arg Asp Pro Lys Asp Ala Thr Ser Arg Glu
225 230 235 240

Phe Phe Arg Asp Ser Phe Met Ser Lys Leu Ser Thr Glu Val Pro Lys
245 250 255

Val Ile Gly Val Pro Arg Thr Phe Leu Glu Gly Leu Arg Asp Asp Ile
260 265 270

Arg Glu Asn Phe Phe Ser Ser Leu Ala Ile Phe Glu Gly Glu Gly Thr
 275 280 285

His Leu Val Asp Val Glu Leu Asp Ile Leu Ser His Ala Val Ser Ile
 290 295 300

Tyr Tyr Ile Leu Ala Ser Ala Glu Ala Ala Thr Asn Leu Ala Arg Phe
 305 310 315 320

Asp Gly Val Arg Tyr Gly Tyr Arg Ser Pro Gln Ala His Thr Ile Ser
 325 330 335

Gln Leu Tyr Asp Leu Ser Arg Gly Glu Gly Phe Gly Lys Glu Val Met
 340 345 350

Arg Arg Ile Leu Leu Gly Asn Tyr Val Leu Ser Ala Glu Arg Gln Asn
 355 360 365

Val Tyr Tyr Lys Lys Ala Thr Ala Val Arg Ala Lys Ile Val Lys Ala
 370 375 380

Phe Arg Thr Ala Phe Glu Lys Cys Glu Ile Leu Ala Met Pro Val Cys
 385 390 395 400

Ser Ser Pro Ala Phe Glu Ile Gly Glu Ile Leu Asp Pro Val Thr Leu
 405 410 415

Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr Leu Pro
 420 425 430

Ala Ile Ala Val Pro Ser Gly Phe Ser Lys Glu Gly Leu Pro Leu Gly
 435 440 445

Leu Gln Ile Ile Gly Gln Gln Gly Gln Asp Gln Gln Val Cys Gln Val
 450 455 460

Gly Tyr Ser Phe Gln Glu His Ala Gln Ile Lys Gln Leu Phe Ser Lys
 465 470 475 480

Arg Tyr Ala Lys Ser Val Val Leu Gly Gly Gln Ser
 485 490

<210> 66

<211> 1962

<212> DNA

<213> Chlamydia psittaci

<400> 66

atgagctacc gtaaactgtc gactctaatt gttctaggag tgtttgctct ttatgctctt 60
 ctagtattgc gttattataa aattcaaatt tgtgaaggag accactgggc cgcagaagct 120
 ctccggcaac acgaattttg tgtccgtgat ccttttcgaa ggggcacctt ttttgctaac 180
 acgacagtac gtaagggaga caaagacctt cagcagcctt tcgctgtcga tattacaaaa 240
 tttcaccttt gtgcagatcc tttagctatt cccgaatgtc atcgtgatga gatcatccaa 300

```

gggattctcc aatttattga ggggcagacc tacgacgacc tctccctaaa gttagataag 360
aaatctcggg attgtaagct gtatccttta ttagatgttt ctgtccatga ccggctatcc 420
ctttggtgga aaggatatgc aacaaagcat cgcttaccaa caaacgccct attttttatt 480
acggactacc aacgctcgtg tccttttggg aagctccttg gacaagttct ccatacctta 540
agagaaatta aggatgagaa aacaggaaaa gcctttccca caggcgggat ggaggcgtac 600
tttaatacata ttctggaagg ggacgttgga gagagaaagc tgttgcggtc tcctttgaac 660
cgtttagata cgaatcgtgt tatcaaaactg cctaaagatg gctctgatat ctaccttacg 720
atcaatcctg tgatccagac cattgcagag gaagaactcg aacggggcgt gctagaagct 780
aaagcccagg ggggtaggct cattctaattg aactcccaaa caggagagat tcttgactg 840
gctcaatata cgtttttcga tcccacaaat tataaggaat acttcaataa caaagagcgc 900
atcgaacata cgaaggtatc ttttgtgagc gatgtttttg aaccggggtc gatcatgaaa 960
cctttgactg tggcgattgc tttacaagct aacgaagagg ctagcttaaa atcgcagaaa 1020
aagatttttg atcctgaaga acctatcgat gtgaccagga cactcttccc tggacgaaaa 1080
ggatctccgc ttaaggatat ttctagaaac tctcaattga atatgtacat ggctatccag 1140
aaatcttcga atgtctatgt agctcagctg gctgaccgca tcatacaatc tttaggagtg 1200
gcctggtacc aacagaagtt gctagctctg ggatttggaa gaaaaacagg gatcgagctt 1260
cccagtgagg cctctggttt ggtgccttct ccccatcggt tccatattaa tggttccctg 1320
gaatggtcct tatctactcc atattccttg gctatgggat ataataatct ggcaacaggg 1380
atacaaatgg ttcaagccta cgctatcctt gcaaacggag gttatgccgt ccggcccact 1440
ttagtaaaaa agatcgtctc tgcttcagga gaggaatata atcttctctac taaagagaag 1500
acacgactct tttcagaaga aattactaga gaagtgttc gtgccatgcg ttttacaacg 1560
ttaccgggag gttcgggatt tcgagcctct cctaagcatc actctagtgc tgggaaaaca 1620
ggaactacag aaaagatgat tcatggaaaa tatgataaac gccgtcatat tgcttctttt 1680
ataggtttta ctcccgtaga gagctcggag ggaaatttcc cacctttagt gatgctcgtc 1740
tccatagatg atcctgaata tggtttgcca gccgacggca cgaaaaatta tatggggggg 1800
cgttgtgcgg caccattttt ttctaggggt gctgaccgca cactcctcta tttagggatt 1860
cttcagaca agaagctaag aaattgcgac gaagaagctg ctgcattaaa gcgtctctat 1920
gaagaatgga atcgttctcc gaaacaaggg ggaacgaggt ga 1962

```

<210> 67

<211> 653

<212> PRT

<213> Chlamydia psittaci

<400> 67

```

Met Ser Tyr Arg Lys Arg Ser Thr Leu Ile Val Leu Gly Val Phe Ala
  1                      5                      10                      15

```

```

Leu Tyr Ala Leu Leu Val Leu Arg Tyr Tyr Lys Ile Gln Ile Cys Glu
                20                      25                      30

```

```

Gly Asp His Trp Ala Ala Glu Ala Leu Gly Gln His Glu Phe Cys Val
                35                      40                      45

```

```

Arg Asp Pro Phe Arg Arg Gly Thr Phe Phe Ala Asn Thr Thr Val Arg
                50                      55                      60

```

```

Lys Gly Asp Lys Asp Leu Gln Gln Pro Phe Ala Val Asp Ile Thr Lys
                65                      70                      75                      80

```

```

Phe His Leu Cys Ala Asp Pro Leu Ala Ile Pro Glu Cys His Arg Asp
                85                      90                      95

```

Glu Ile Ile Gln Gly Ile Leu Gln Phe Ile Glu Gly Gln Thr Tyr Asp
 100 105 110
 Asp Leu Ser Leu Lys Leu Asp Lys Lys Ser Arg Tyr Cys Lys Leu Tyr
 115 120 125
 Pro Leu Leu Asp Val Ser Val His Asp Arg Leu Ser Leu Trp Trp Lys
 130 135 140
 Gly Tyr Ala Thr Lys His Arg Leu Pro Thr Asn Ala Leu Phe Phe Ile
 145 150 155 160
 Thr Asp Tyr Gln Arg Ser Tyr Pro Phe Gly Lys Leu Leu Gly Gln Val
 165 170 175
 Leu His Thr Leu Arg Glu Ile Lys Asp Glu Lys Thr Gly Lys Ala Phe
 180 185 190
 Pro Thr Gly Gly Met Glu Ala Tyr Phe Asn His Ile Leu Glu Gly Asp
 195 200 205
 Val Gly Glu Arg Lys Leu Leu Arg Ser Pro Leu Asn Arg Leu Asp Thr
 210 215 220
 Asn Arg Val Ile Lys Leu Pro Lys Asp Gly Ser Asp Ile Tyr Leu Thr
 225 230 235 240
 Ile Asn Pro Val Ile Gln Thr Ile Ala Glu Glu Glu Leu Glu Arg Gly
 245 250 255
 Val Leu Glu Ala Lys Ala Gln Gly Gly Arg Leu Ile Leu Met Asn Ser
 260 265 270
 Gln Thr Gly Glu Ile Leu Ala Leu Ala Gln Tyr Pro Phe Phe Asp Pro
 275 280 285
 Thr Asn Tyr Lys Glu Tyr Phe Asn Asn Lys Glu Arg Ile Glu His Thr
 290 295 300
 Lys Val Ser Phe Val Ser Asp Val Phe Glu Pro Gly Ser Ile Met Lys
 305 310 315 320
 Pro Leu Thr Val Ala Ile Ala Leu Gln Ala Asn Glu Glu Ala Ser Leu
 325 330 335
 Lys Ser Gln Lys Lys Ile Phe Asp Pro Glu Glu Pro Ile Asp Val Thr
 340 345 350
 Arg Thr Leu Phe Pro Gly Arg Lys Gly Ser Pro Leu Lys Asp Ile Ser
 355 360 365
 Arg Asn Ser Gln Leu Asn Met Tyr Met Ala Ile Gln Lys Ser Ser Asn
 370 375 380

Val Tyr Val Ala Gln Leu Ala Asp Arg Ile Ile Gln Ser Leu Gly Val
385 390 395 400

Ala Trp Tyr Gln Gln Lys Leu Leu Ala Leu Gly Phe Gly Arg Lys Thr
405 410 415

Gly Ile Glu Leu Pro Ser Glu Ala Ser Gly Leu Val Pro Ser Pro His
420 425 430

Arg Phe His Ile Asn Gly Ser Leu Glu Trp Ser Leu Ser Thr Pro Tyr
435 440 445

Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Ile Gln Met Val
450 455 460

Gln Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Ala Val Arg Pro Thr
465 470 475 480

Leu Val Lys Lys Ile Val Ser Ala Ser Gly Glu Glu Tyr His Leu Pro
485 490 495

Thr Lys Glu Lys Thr Arg Leu Phe Ser Glu Glu Ile Thr Arg Glu Val
500 505 510

Val Arg Ala Met Arg Phe Thr Thr Leu Pro Gly Gly Ser Gly Phe Arg
515 520 525

Ala Ser Pro Lys His His Ser Ser Ala Gly Lys Thr Gly Thr Thr Glu
530 535 540

Lys Met Ile His Gly Lys Tyr Asp Lys Arg Arg His Ile Ala Ser Phe
545 550 555 560

Ile Gly Phe Thr Pro Val Glu Ser Ser Glu Gly Asn Phe Pro Pro Leu
565 570 575

Val Met Leu Val Ser Ile Asp Asp Pro Glu Tyr Gly Leu Arg Ala Asp
580 585 590

Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala Ala Pro Ile Phe Ser
595 600 605

Arg Val Ala Asp Arg Thr Leu Leu Tyr Leu Gly Ile Leu Pro Asp Lys
610 615 620

Lys Leu Arg Asn Cys Asp Glu Glu Ala Ala Ala Leu Lys Arg Leu Tyr
625 630 635 640

Glu Glu Trp Asn Arg Ser Pro Lys Gln Gly Gly Thr Arg
645 650

<210> 68

<211> 819

25103618.1

<212> DNA

<213> Chlamydia psittaci

<400> 68

```
atgaaaaaaaa aattatcatt acttgtaggt ttaatTTTTtG ttttgagttc ttgccataag 60
gaagatgctc agaataaaaat acgtattgta gccagtcCGa cacctcatgc ggaattattg 120
gagagtttac aggaagaggc taaagatctt ggaatcaagc tgaaaatact tccagtagat 180
gattatcgta ttctaatacg tttgcttttg gataaacaag tagatgcaaa ttactttcaa 240
catcaagctt ttcttgatga cgaatgcgag cgttatgatt gtaaggggtga attagttggt 300
atcgctaaag ttcatTTtGga acctcaagca atttattcta agaaacattc ttcttttagag 360
cgcttaaaaaa gccagaagaa actgactata gcgattcctg tggatcgtac gaatgctcag 420
cgtgctctac acttgttaga agagtgcgga ctcatTTgtt gcaaagggcc tgctaattta 480
aatatgacag ctaaagatgt ctgtgggaaa gaaaatagaa gtatcaacat attagaggtg 540
tcagctcctc ttcttgctcg atctcttcct gacgttgatg ctgctgtcat tcctggaaat 600
tttgcTatag cagcaaacct ttctccaaag aaagatagtc tttgtttaga ggatctttcg 660
gtatctaagt atacaaacct tgttgtcatt cgttctgaag acgtagggtc tcctaaaatg 720
ataaaattac agaagctgtt tcaatctcct tctgtacaac atttttttga taaaaaatat 780
catgggaata ttttgacaat gactcaagac aatggttag 819
```

<210> 69

<211> 272

<212> PRT

<213> Chlamydia psittaci

<400> 69

```
Met Lys Lys Lys Leu Ser Leu Leu Val Gly Leu Ile Phe Val Leu Ser
  1              5              10              15

Ser Cys His Lys Glu Asp Ala Gln Asn Lys Ile Arg Ile Val Ala Ser
          20              25              30

Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu Glu Ala Lys
      35              40              45

Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp Tyr Arg Ile
      50              55              60

Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn Tyr Phe Gln
      65              70              75              80

His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp Cys Lys Gly
          85              90              95

Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln Ala Ile Tyr
      100              105              110

Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln Lys Lys Leu
      115              120              125

Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg Ala Leu His
      130              135              140

Leu Leu Glu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro Ala Asn Leu
```

25103618.1

145		150		155		160
Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg Ser Ile Asn						
	165			170		175
Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu Pro Asp Val						
	180			185		190
Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala Asn Leu Ser						
	195			200		205
Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val Ser Lys Tyr						
	210			215		220
Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser Pro Lys Met						
225		230		235		240
Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln His Phe Phe						
	245			250		255
Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln Asp Asn Gly						
	260			265		270